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"FLIGHT" PHOTOGRAPHS

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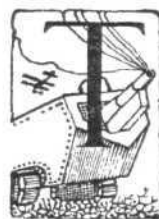
DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

- May 5 Aerial Pageant, Filton, Bristol
- May 10 "The Design and Construction of Modern Rigid Airships." Mr. B. N. Wallis, before R.Ae.S. and Inst.Ae.E.
- May 17 Aero Golfing Soc.—Spring Meeting, "Flight" Challenge Cup
- May 18 Martlesham Heath Reunion Dinner (Connaught Rooms, 7 p.m.)
- May 24—
- June 9 Royal Tournament, Olympia
- May 27-28 Light 'Plane Meeting, Hamble
- May 30 Wilbur Wright Lecture "The Slotted Wing." Mr. F. Handley Page, before R.Ae.S. and Inst.Ae.E.
- June 3-9 R.A.F. Rifle Association Prize Meeting
- June 7 7th Annual Middle East Dinner
- June 9 Light 'Plane Meeting, Castle Bromwich

EDITORIAL COMMENT



A Memorable Lecture

THE Royal Aeronautical Society with which is incorporated the Institution of Aeronautical Engineers is to be very warmly congratulated on the quality of the papers read before it recently. In place of the somewhat "academic" nature which at one time was characteristic of the majority of the papers, the Society now appears to get papers of a much more practical and "live" character. The change cannot, we think, but add to the prestige and standing of the Society, and if this new quality can be maintained, the Society should benefit in the manner most desirable, *i.e.*, by a greatly increased membership. Certainly the papers read recently have been both interesting and instructive.

To no paper does this apply more strongly than to that presented by Herr Claudius Dornier on April 26. To begin with, as pointed out by the chairman, Col. the Master of Sempill, it was in itself a great honour that so famous an aircraft designer should have come personally to this country to present a paper on a subject very dear to British aviation circles. But that the paper should have been so thoroughly detailed, so perfectly frank in placing "the cards on the table," so scrupulously painstaking in forming the basis of comparison on known and proved facts (except for the type "E" boat, which is not yet completed but the data relating to which were estimated with the very greatest care from known examples), is not only a testimony to Herr Dornier's courage but also to his sportsmanship. After all, the day will come when there will be competition in the world's market for flying-boats, and by his frank exposition of the case for the flying-boat Herr Dornier has set an example which, were it to be followed by other designers, could not fail materially to assist progress and development.

It seems likely that even now the great majority of those who heard Herr Dornier's paper have not entirely grasped the full value of it. This is almost inevitable, since the tables and graphs which accompanied it were not included in the printed copy of the paper, but were merely thrown on the screen as lantern

slides. Moreover, the presentation of the data was kept in the metric units, which may be assumed to have been rather unfamiliar to most of those present. And in the short time available it was very difficult to extract from the tables sufficient information upon which to base a technical discussion. Doubtless this will be remedied in the written contributions which will be published in the Society's journal.

For the benefit of our readers we have converted into British units three of the tables from Herr Dornier's paper, and these are given in the text elsewhere in this issue. We regret that it has not been found possible to include more, as the three tables by themselves must of necessity be incomplete. They do, however, indicate in a general way the main details upon which Herr Dornier bases his belief in the possibilities of the large flying-boat. Whether one agrees entirely with him or not, he has put up a very good case, and one which will repay a very close scrutiny.

If we interpreted correctly the general feeling at the lecture, it was that possibly the large size of flying-boat was only rendered feasible by increasing the wing loading and decreasing the load factors. Concerning the latter it is impossible to form an opinion, as the basis on which to do so is lacking. As regards the wing loading, however, one of the tables gave actual figures, confirmed by Herr Dornier after the discussion. According to these, the Do. X, as the very large flying-boat now being constructed is called, will have a wing loading of something like 22 lb. per sq. ft. It is worth recalling that this was approximately the wing loading of the Schneider Trophy racers! The power loading is, however, some five times as great as that of the racing machines, *i.e.*, nearly 19 lb. per horse-power instead of between 3 and 4 lb. per horse-power. Whether such a wing

loading will produce a useful commercial machine yet remains to be seen. There is no reason to suppose that the wing section employed has any very outstanding characteristics. If a maximum lift coefficient of 0.7 "absolute" is assumed, the minimum speed with such a wing loading would be about 80 m.p.h., which would mean that not only would this be the take-off speed but also the landing speed.

However that may be, as Major Ledeboer pointed out, Herr Dornier has the courage of his convictions. He is building the machine, and "the proof of the pudding, etc." The performance of the Do. X will be watched with the very greatest interest in this country.

❖ ❖ ❖

Three British World's Records

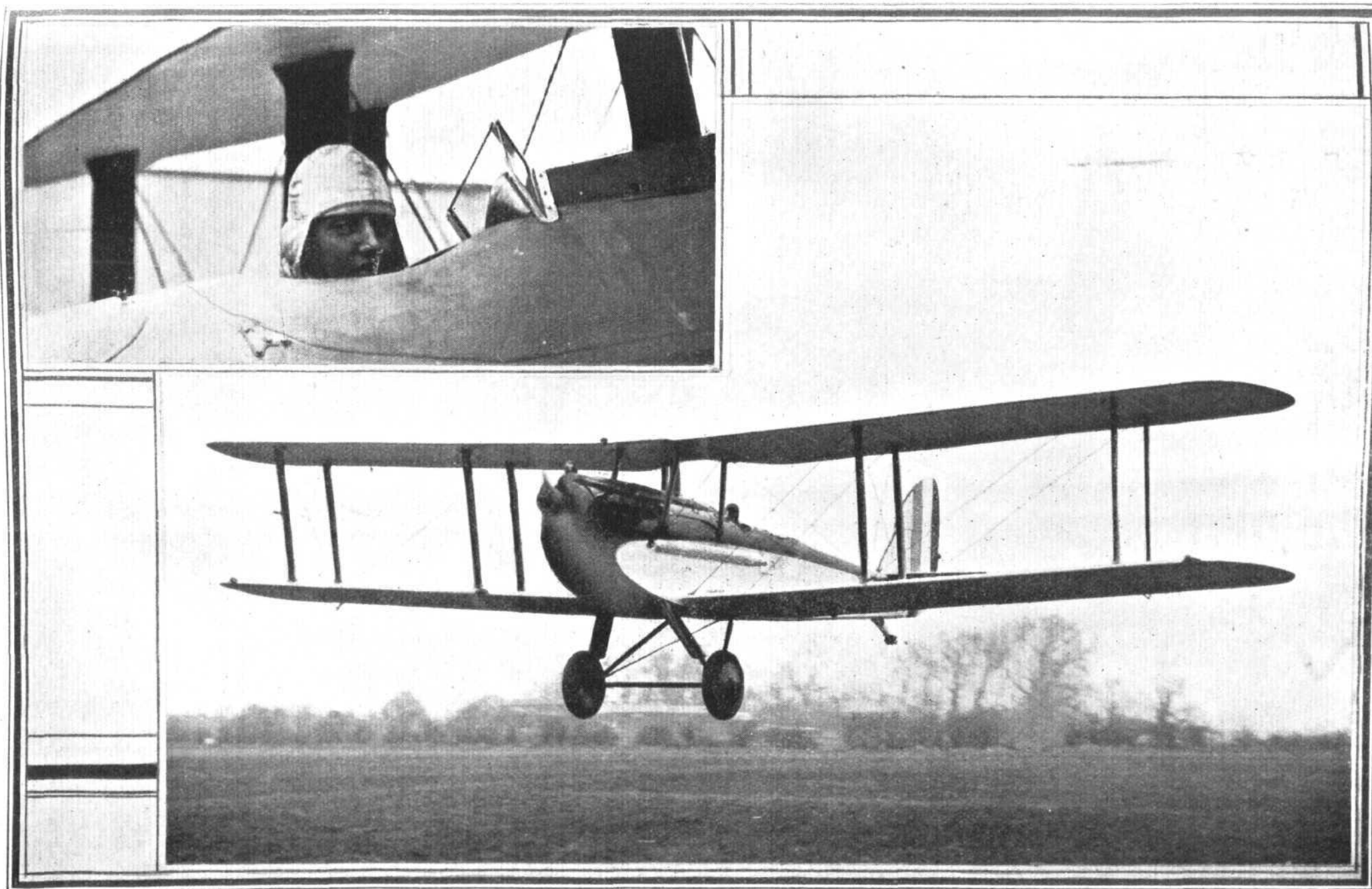
Something like 84 world's records are officially recognised. Out of these, until Friday of last week, Great Britain held but two: The pure speed record over 100 km. (Webster on the Supermarine-Napier S.5 in the Schneider race, 283 m.p.h.) and a similar record in the light 'plane class, held by Broad on the de Havilland "Tiger Moth," with a speed of 186 m.p.h.

By his flight on Friday last Capt. Broad has added three more world's records to the small British collection, for speeds over 100 and 500 kms. with a useful load of a metric ton, and for speed over 100 kms. with useful load of 500 kgs., although Broad actually carried twice as much.

The de Havilland Aircraft Co. and D. Napier and Son share with Capt. Broad the credit for having thus helped to "put England on the map" again as far as world's records are concerned. It is possible that other records will follow. In the meantime an excellent start has been made.



THE GERMAN-IRISH ATLANTIC FLIGHT: The Junkers monoplane "Bremen," on the rocky and snow-covered Greenly Island, where Baron von Huenefeld, Capt. Koehl, and Maj. Fitzmaurice landed on April 13, after their 37-hour flight across the Atlantic.



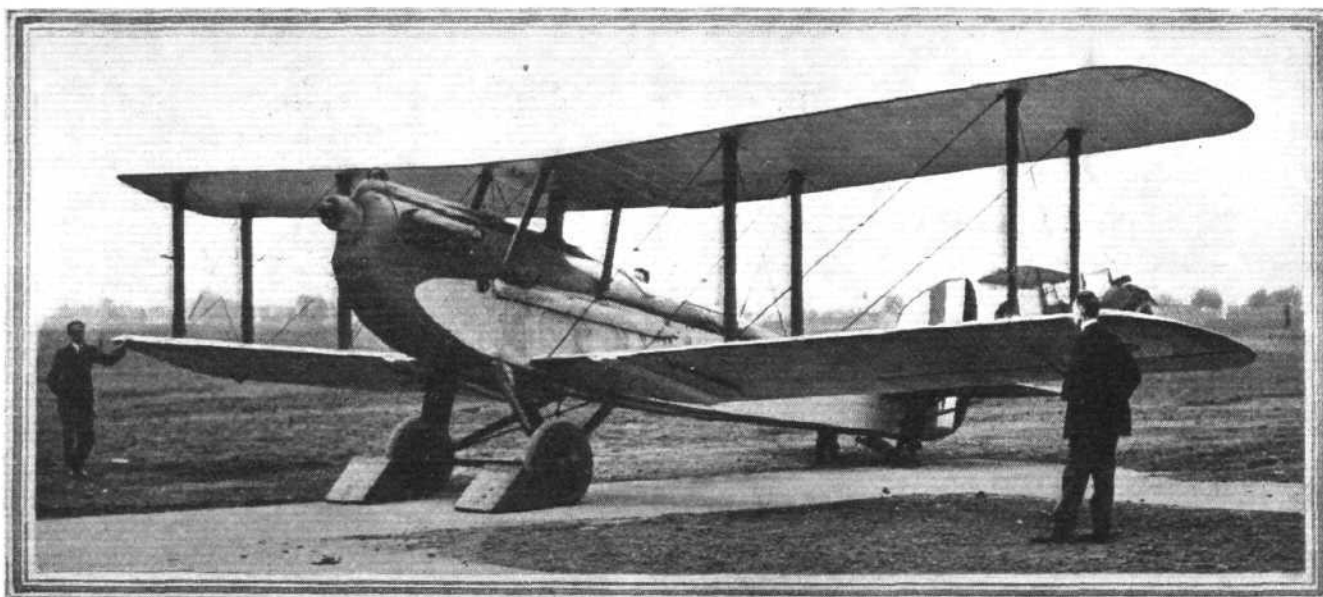
["FLIGHT" Photographs]
THREE WORLD'S RECORDS FOR GREAT BRITAIN: On April 27 Capt. Hubert Broad, flying a De Havilland "Hound" fitted with Napier Series XI engine, established three new world's records for speed with a useful load of 2,000 kgs. Our photograph shows the "Hound" in flight and, inset, Capt. Broad in the cockpit.

THREE WORLD'S RECORDS FOR BRITAIN

Captain Broad's Splendid Performance in Bad Weather

FRIDAY, April 27, 1928, deserves to go down as a red-letter day in the history of British aviation. On that day Capt. Hubert Broad, A.F.C., flying a de Havilland "Hound" fitted with a Napier Series XI aero engine, established three world's records, carrying a useful load of 1,000 kgs. (2,200 lbs., or nearly a ton). On the previous day Broad had beaten the

the lower wing, a short distance out from the fuselage. Others were to be seen under the engine and in various other places inside. With the exception that the rear cockpit had been covered up (the gun having, of course, been removed) and the bomb racks taken off, the machine appeared little changed from its original status as a two-seater general-purpose



["FLIGHT" Photograph]

A RECORD BREAKER: The De Havilland "Hound" having its Napier Series XI engine warmed up before the record flight.

world's record for this useful load over a distance of 100 kms., but on Friday evening he was to improve upon his performance of the day before.

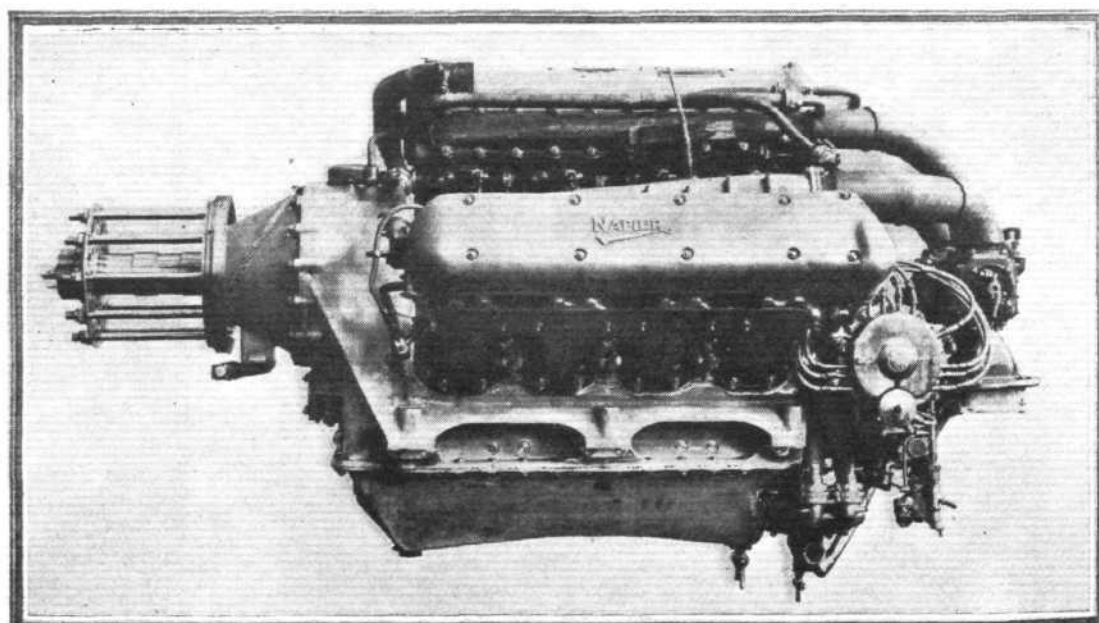
The afternoon of April 27 was dull, and with a considerable wind, and it looked as if the weather might get worse instead of better. However, the de Havilland "Hound" was out on the aerodrome being "groomed" for its hard test, and Mr. White went over the course in a "Moth" to report on the visibility. His report was not very encouraging; the visibility was none too good, although no worse at the Reading end (the other turning point) than at Stag Lane.

While the "Hound" was receiving the final touches, one had an opportunity of examining it, and in particular the placing of the numerous lumps of lead which constituted its useful load. Two long cylinders of lead had been placed on

machine. The Napier "Lion," Series XI, cannot be referred to in detail at the moment, but when it was started a little later it had a most reassuring roar, and the actual flight subsequently proved that it had both the power and the reliability to see the two hours' flight at full throttle through to a victorious conclusion.

As soon as the finishing touches had been given to the machine the "Lion XI" was started, and while it was being warmed up those privileged to be present discussed the prospects. A few drops of rain began to fall. The wind dropped at the same time, it is true, but the visibility became steadily worse. However, Broad was determined to go through with the attempt, and when the engine had been warmed up he taxied out to the far corner of the aerodrome, turned around, and opened his engine. The "Hound"

Three New
 World's Records:
 The Napier Aero
 Engine, Series XI,
 which was fitted
 in Capt. Broad's
 De Havilland
 "Hound."



gathered speed, slowly at first and then at an increasing rate. When about two-thirds of the way across the aerodrome it lifted, cleanly and without any apparent trouble, and climbed at what was really an excellent angle, considering that it was carrying nearly a ton useful load in addition to its fuel and the weight of Broad (the latter not very great, of course). In a very few moments the machine had swung around and returned across the aerodrome with the "Lion" roaring lustily. Soon the "Hound" disappeared in the rain and mist, which by now had reduced visibility to a mile or less.

While the rain fell steadily those present paid a visit to the club-house of the London Aeroplane Club, for what purpose does not concern this story. Some 20 minutes later, however, there was a cluster of interested spectators surrounding our old friend Mr. A. G. Reynolds, who sat serenely at his little table, in line with the two timing posts, trying as best he might to shield his beloved instruments from the rain. Presently there was a faint hum, and a little later the "Hound" hove in sight, going at a great pace and ultimately dashing across the line 23 mins. 59½ secs. after starting, giving a speed for the first circuit of 155.428 m.p.h. The weather was getting a little worse, if anything, and there would have been every justification for Broad abandoning the attempt. He did not do so, however, and started off on his second circuit, the "Lion" sounding as if it enjoyed the rain.

Just under 23 minutes later Broad returned after completing his second circuit, his time for the two circuits being 46 mins. 57½ secs., giving an average speed of 158.8 m.p.h. The speed for the second circuit itself was, however, 162.284 m.p.h., which beat his attempt of the day before and established a world's record over the 100 kms., carrying 1,000 kgs.

In spite of the extremely unfavourable weather, which must have made accurate course-keeping very difficult indeed, Broad continued his flight with great regularity. The speeds for each of the five circuits were as follows:—

First circuit, 155.428 m.p.h.; second circuit, 162.284 m.p.h. Average for two circuits, 158.782 m.p.h. Third circuit, 159.575 m.p.h. Average for three circuits, 159.046 m.p.h. Fourth circuit, 157.931 m.p.h. Average for four circuits, 158.766 m.p.h. Fifth circuit, 158.221 m.p.h. Average for five circuits, 158.656 m.p.h.

Amid loud cheers, Broad made an absolutely perfect



["FLIGHT" Photograph]

WATCHING THE SPLIT SECONDS: Mr. A. G. Reynolds, our famous and popular time-keeper, with his watches and calculating machine during Broad's record flight.

landing on completing his fifth circuit of the course. The records still have to be homologated by the F.A.I., but it can be taken for granted that Broad beat the following three records: the speed over 100 kms. with 1,000-kg. load, previously held by France (Lasne on a Nieuport-Delage), 153 m.p.h.; the speed with the same load over 500 kms., held by Czechoslovakia (Jezek on Letov), 143.3 m.p.h.; and the speed over 500 kms. with 500 kgs. (although Broad actually carried 1,000 kgs.), also held by Lasne on the Nieuport-Delage, 155 m.p.h. In other words, Broad was faster with 1,000 kgs. load over 500 kms. than Lasne, carrying 500 kgs. over the same distance.

THE USE OF PATENTS ON FOREIGN AIRCRAFT

By ARTHUR H. STANLEY

THERE has recently come into operation in this country a new Patent Act which, for the first time in history, makes special mention of aircraft, and more particularly foreign aircraft. The Patents and Designs (Convention) Act, 1928, introduces minor amendments in the principal Patents Act, but contains entirely new provisions limiting the rights of a patentee to sue for any infringement of his patent occurring on a foreign vessel whilst in territorial waters, or on a foreign aircraft or land vehicle whilst in the United Kingdom.

Permission is given under the Act for foreigners to use freely in the United Kingdom and the Isle of Man any patented invention relating to "the construction or working of a foreign aircraft or of the accessories thereof," providing its stay here is only temporary or accidental, and with the further stipulation that the foreign state shall have been declared to be one which confers corresponding privileges to users of British aircraft in the particular foreign country. Any such declarations will be made from time to time by Order in Council, by which means the names of the countries coming within the scheme will become known. The British Dominions outside the United Kingdom are to be dealt with by Orders in Council in the same way as if they also were foreign countries. One may reasonably expect to hear, before

very long, that the mutual arrangements above indicated have been entered into by most of the important states of the world.

In a new Act of Parliament, one naturally looks out for any subtle flaws or ambiguities of construction or interpretation, and in the present instance it is easy to perceive that the words "temporary" and "accidental" may lead to difficulties, for any visit to this country which was neither temporary nor accidental, would place the user of any invention employed in the construction or working of such aircraft or its accessories outside of the immunity conferred by the Act, and thus leave him at the mercy of any patentee who might desire to take proceedings for infringement of his patent rights. An interesting question is likely to arise also when the term "corresponding" privileges in foreign countries is considered.

Such foreign rights or privileges can hardly be expected to be precisely the same as or necessarily co-extensive with those provided in the wording of the new Act. It will be wise, therefore, to study the details of the relevant portions of the patent law of any country specified in the Order in Council, before assuming that the reciprocity of that country is on all fours with our own.

this type of parachute without a single failure. General Guidoni's death means a serious loss to Italian aviation, and is felt very keenly in that country, as it will also be by those who knew him in British and foreign aviation circles.

Millionaire Pilot Killed

MR. C. SHERRITT, a millionaire mining prospector, was killed at The Pas, Manitoba, on April 21, when he crashed in a new machine which he had recently purchased. He recently learned to fly and had flown to The Pas from Florida.

General Guidoni Killed

It is with regret that we have to record the death, as a result of a parachute accident, of General Alessandro Guidoni, head of the Italian Military Engineering Corps of Aerostatics, and one time Italian Air Attaché in London and Washington. General Guidoni was making a secret test at Monte Celio, on April 27, of a parachute which, when he jumped from an aeroplane piloted by Lieut. Freri, failed to function properly, and he fell from a height of about 3,000 ft. and was killed instantly. Over 2,000 tests had previously been made with

THE NEW ROLLS-ROYCE "F" TYPE ENGINE

Many New Features Incorporated in the Design

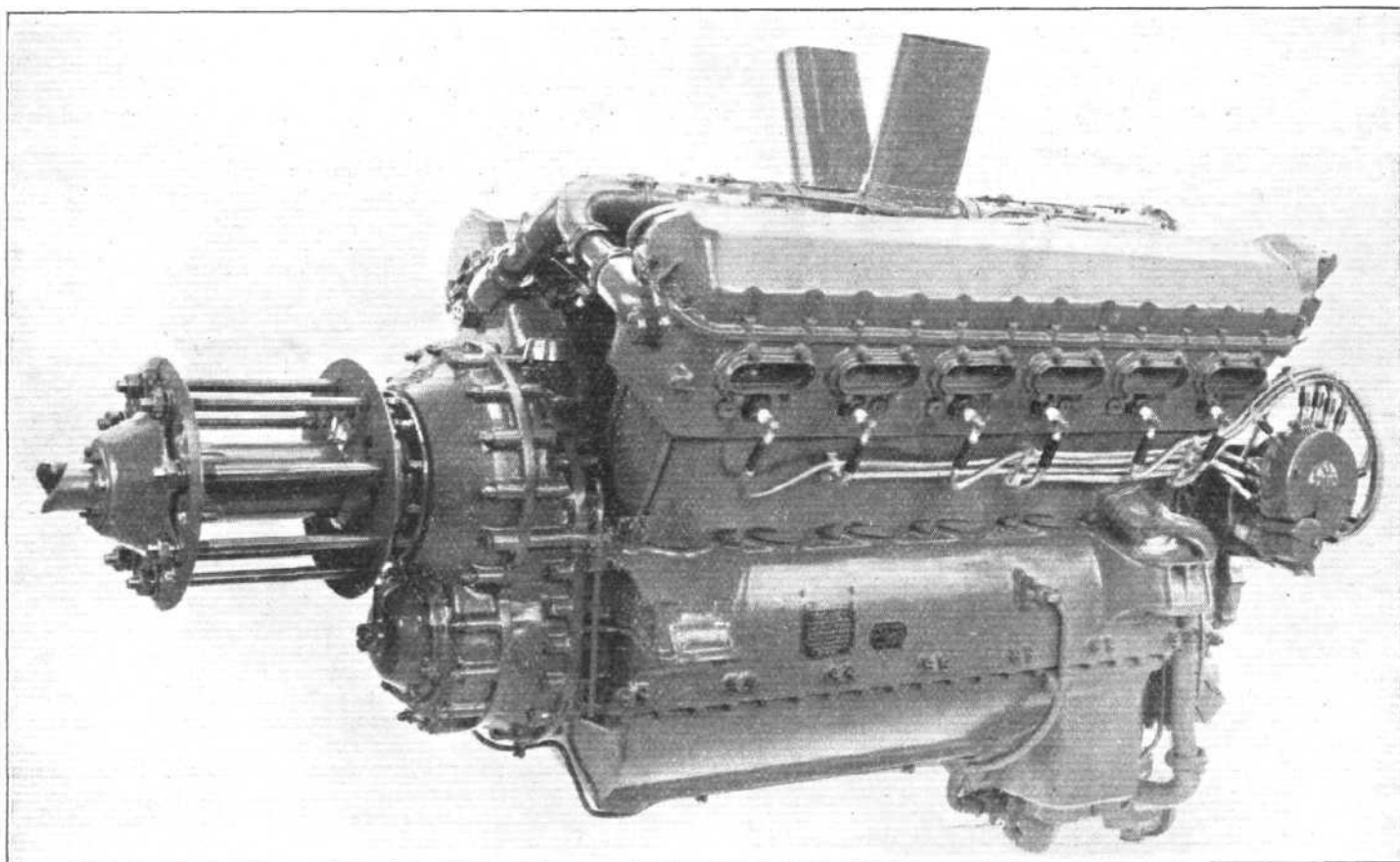
It is now some time since Rolls-Royce, Ltd., first produced the "F" type of engine, and as usual, in such cases, a considerable period lapsed before it became permissible to describe the new engine. A brief description and some illustrations of the "F 10" were published in *FLIGHT* of June 23, 1927. We are now, fortunately, in a position to place before our readers a more detailed description of a development of that engine, known as the "F 12," which may be said in a general way to be the geared version of the "F 10." A visit to the Derby works of Rolls-Royce, Ltd., last week, revealed the fact that the "F 12" marks a very distinct departure from what has been, in the past, standard Rolls-Royce practice. External appearances alone are such that, did one not know the "F 12" to be produced at Derby, one would not recognise the engine as a Rolls-Royce. The separate cylinders with welded water jackets, which have been a distinguishing feature of Rolls-Royce aero engines for many years, have given place in the "F" type to smooth blocks of six, while the familiar khaki

brought remarkably close together. In fact, the steel liners of adjacent cylinders all but touch each other. As a result, the overall length of the engine has been reduced to a minimum.

Two inlet and two exhaust valves are provided per cylinder, operated by camshafts and rockers. The valves are made from special steel to withstand high temperature conditions, and operate in renewable guides. The camshafts and rocker mechanism are mounted on top of the cylinder heads, and are totally enclosed by means of a removable cylinder head cover. The whole of the valve mechanism is positively lubricated.

The inlet and exhaust valves of each cylinder block are operated by one camshaft. The camshafts are machined from 5 per cent. case-hardening nickel steel bar, the bearing surfaces and cam faces being hardened and ground.

The valve rockers are 5 per cent. case-hardening nickel steel forgings, machined all over and provided with hardened cam follower faces and hardened steel adjustable tappets.



THE ROLLS-ROYCE "F" TYPE AERO ENGINE : Three-quarter front view. The total absence of accessories from the outside should be noted.

colour has been replaced by a black. There are many other changes in the design, as will, we hope, emerge from a perusal of the following description, but these two are the first to impress one when seeing the new engine for the first time. Incidentally, the letter "F" was, we believe, chosen to represent the name "Falcon," but as a much earlier Rolls-Royce engine of relatively low power was known as the "Falcon," the name was dropped and the initial letter only retained.

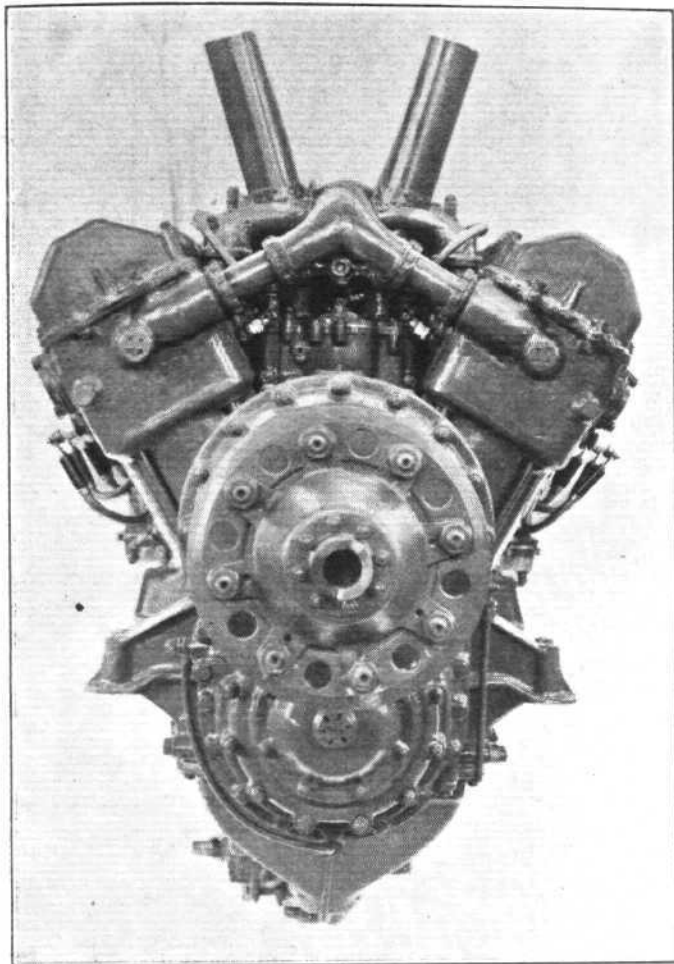
As we have already said, the "F" type engine has cylinders cast in blocks of six, and a novel feature of the design is that the cylinder heads are integral with the blocks, inserted valve seatings being used for the two inlet and two exhaust valves in each cylinder. While the cylinder blocks, placed at an angle of 60 degrees, are formed from aluminium alloy castings, the cylinder barrels are liners of steel, the blocks being held down by long studs passing through the complete depth of cylinder casting and abutting on the crank chamber by means of flanges formed on the cylinder liners. This form of construction has been found to be very light, while at the same time providing great stiffness. Another feature is that the cylinders are

The camshafts are driven by means of inclined tubular driving shafts with bevel gears at the upper and lower ends. Out-of-alignment and expansion effects are allowed for by hardened serrated couplings. The driving shafts are supported in ball bearings, and the whole totally enclosed in tubular casings.

The gears for driving the camshafts and all auxiliaries are driven from the rear end of the crankshaft, through the medium of a spring drive to eliminate crankshaft torsional vibrations from all auxiliary drives. The gears are made from 5 per cent. case-hardening nickel steel and worm wheels made from phosphor bronze, and all gears are fitted to shafts running on ball bearings and totally enclosed in a suitable casing.

The pistons are made from special aluminium alloy forgings machined all over, and are of special design which enables the heat to be dissipated in order to keep the temperature of the piston heads as low as possible. Four piston rings are provided, three being arranged as compression rings above the gudgeon pin and one scraper ring below at the base of

the piston skirt. The compression rings are prevented from rotation by means of stops. The gudgeon pins are of 5 per cent. case-hardening nickel steel, hardened and ground. They are arranged to be a "floating" fit in the piston bosses, as well as in the connecting rod small end, axial movement being suitably limited.



THE ROLLS-ROYCE "F" TYPE AERO ENGINE :
Propeller end. Note the single-spur reduction gear, which raises the propeller hub to approximately the centre of the frontal area.

The connecting rods are "H" section of the "forked" type, made from $3\frac{1}{2}$ per cent. nickel steel forgings, heat treated to give a high brinell, and machined all over to reduce weight variations. A divided white metal lined steel block is bolted to the forked rod. The plain rod works upon the centre portion of the steel block, the latter having white metal bearing surface. The small ends of both rods are fitted with "floating" phosphor bronze bushes. All bearings are positively lubricated under pressure.

The six-throw crankshaft is machined from a nickel chrome steel forging, all the journals and crankpins being bored for lightness and to convey lubricating oil to all bearings and connecting rods. All crankpins and journals are accurately ground to close limits for size and trueness of diameter. The crankshaft is carried in seven bearings of ample proportions.

The crankcase is of special aluminium alloy, and is made in two halves of box section suitably ribbed to give the necessary stiffness. The main bearings, consisting of divided mild steel shells, white metal lined, are held in the upper half crankcase by special caps which are secured by suitable bolts on each bearing. Facings are formed on either side of the caps which fit between corresponding facings formed on cheeks within the upper half crankcase. Transverse bolts pass through the crankcase and caps. This arrangement secures the rigidity of one in which the caps are integral with the lower half, while retaining the advantages of caps bolted only to the upper half.

Two "Duplex" carburettors are provided of Rolls-Royce design and manufacture, fitted with automatic control by which the flow of petrol from the float chamber to the jet is automatically regulated to suit varying altitudes. Special compensating passages are provided in the carburettor which

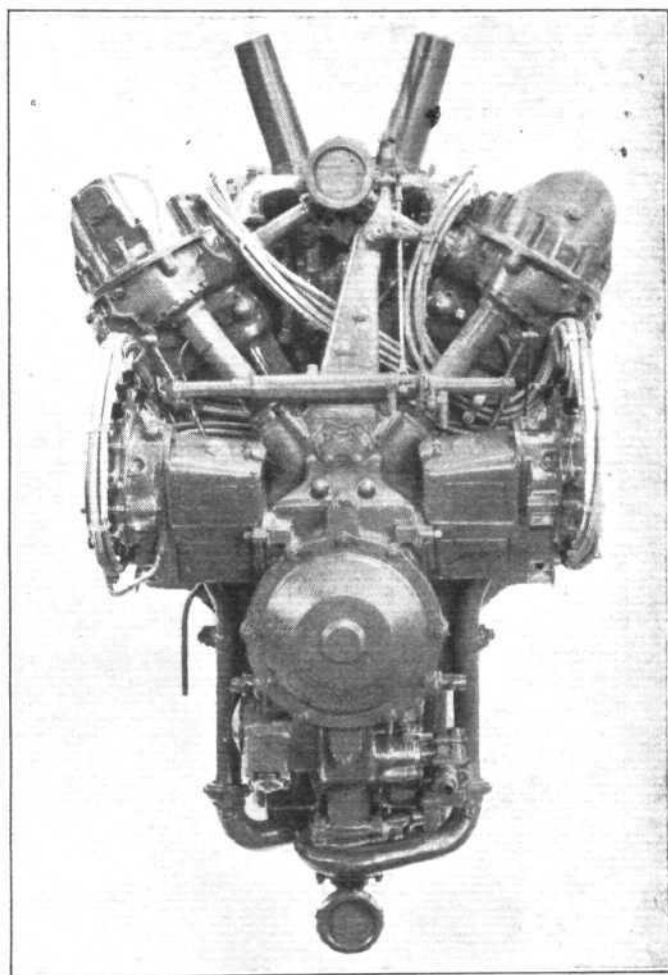
maintain under all conditions the same pressure in the float chamber as in the throat, thereby neutralising eddy-current effects. These passages also enable the float chamber cover to be sealed, thus reducing the risk of petrol leakage.

The induction pipes are designed to secure even distribution of the charge to the cylinders.

Two 12-terminal high tension magnetos are fitted and are supported on the auxiliary gear case from which they are driven by means of serrated couplings. Incorporated in the latter is a device for enabling a fine and positive adjustment of the ignition timing to be effected. Two sparking plugs of approved make are fitted to each cylinder.

The control mechanism for throttle and mixture regulation are fitted on the engine, the magneto controls being interlocked with the carburettor throttle controls.

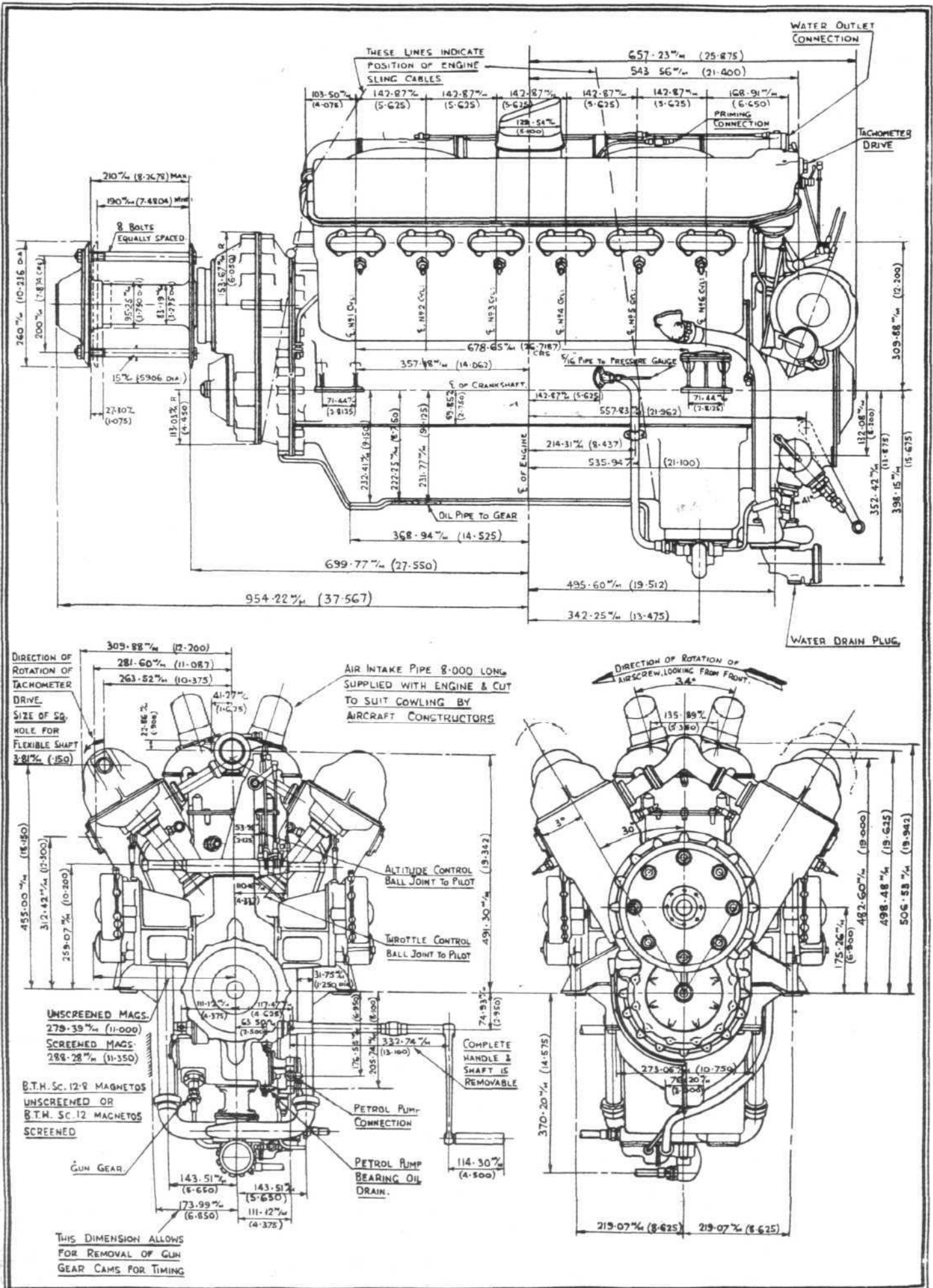
A single spur gear reduction is fitted at the front end of the crankshaft, through which is transmitted the drive to the airscrew. The pinion is driven from the crankshaft through a short shaft, having teeth at the inner end to engage an internally toothed flange bolted to the crankshaft and at the outer end teeth engaging with teeth cut inside a part of the gear pinion. The use of this shaft prevents loads from the gear pinion coming on to the crankshaft. The gear wheels are carried on large size roller bearings, mounted in a substantial cast aluminium case.



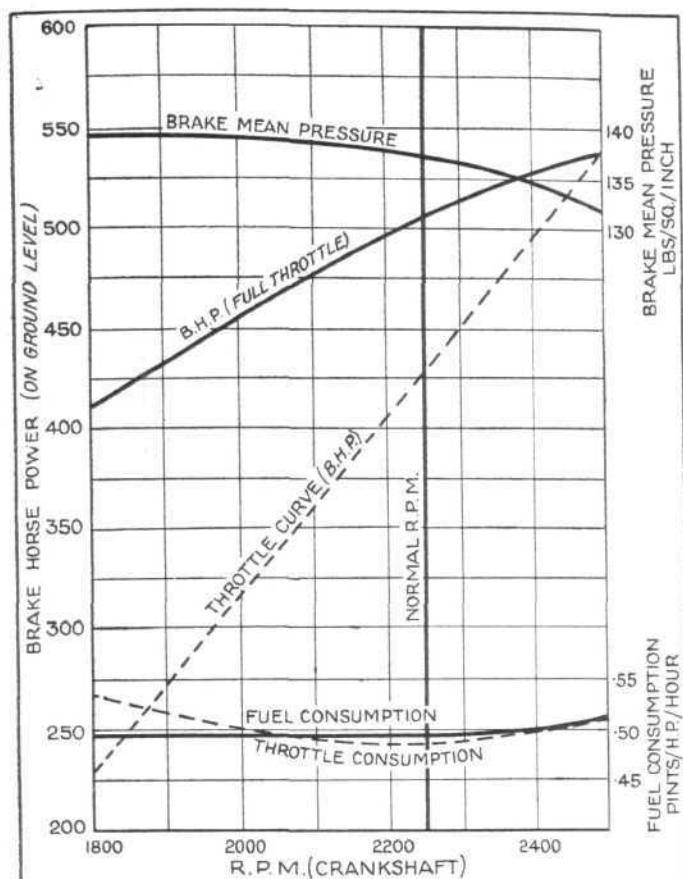
THE ROLLS-ROYCE "F" TYPE AERO ENGINE :
Rear View. All auxiliaries, camshafts, &c., are driven from the rear end of the crankshaft.

A centrifugal water circulating pump of ample capacity is fitted below the auxiliary gear case and driven from same through serrated couplings arranged to take care of movement due to expansion or want of alignment. All water pipe connections consist of rubber joints to provide flexibility.

The lubrication of the engine is on the "dry sump" system, the bulk of the oil being carried in a service tank separate from the engine. Two "scavenger" pumps and one "pressure" pump are carried at the rear end of the lower half crankcase—one "scavenger" pump being arranged to draw oil from the forward end of the crankcase, and the second one delivers the oil to the service tank. The "pressure" pump takes its supply from the service tank and delivers it to the main bearings and other parts under suitable pressure.



THE ROLLS-ROYCE "F" TYPE AERO ENGINE : These installation drawings show the main overall dimensions, &c., so that it should be possible for aircraft designers to see how the engine would fit into any design which they may be contemplating.



Brake Horse Power and Consumption Curves (Ground level) of Rolls-Royce "F" type Aero Engine. The curves are correct to within 2½ per cent. and were obtained at a temperature of 16 degrees C., and an atmospheric pressure of 29.97 in. of Mercury. The compression ratio is 6 to 1.

Each "scavenger" pump is provided with a filter, each filter being contained in the oil pump casing. The main filter for the pressure pump is supplied as a separate unit. A compound relief valve regulates the pressure in the main system, and also adjusts the pressure of an auxiliary low pressure

system which supplies oil to the camshaft bearings and their drive mechanism.

Each engine is fitted with a hand starting gear mounted on the auxiliary gear drive casing, and arranged so that the starting handle can be used either side of the engine.

Priming of the induction pipe is effected by the Rolls-Royce priming device, supplied with each engine, which enables a highly atomised mixture of petrol and air to be injected into the induction system.

An arrangement for driving a revolution counter is mounted on the rear end of one of the camshafts, the connection being driven at one-quarter crankshaft speed.

Provision is made in the auxiliary gear drive unit for driving the cams for operating the Constantinesco gun fire control gear. The auxiliary gear casing is also arranged to receive the plungers of the gun control gear.

The direction of rotation of the propeller is anti-clockwise as viewed from the propeller end of the engine. The engine can be used as either a "tractor" or "pusher" without alteration.

The Rolls-Royce "F.12" engine has successfully passed the 100-hour type test as laid down by the British Air Ministry. Every engine is thoroughly tested before delivery in accordance with the Schedule of Standard Production and Type test, as laid down for aircraft engines by the British Air Ministry. The tests comprise a run of two hours' duration at 90 per cent. full power, after which the engines are dismantled and carefully examined. After re-assembly a final run of 30 mins. duration at 90 per cent. full power is made; and during the last 5 mins. the engines are opened up to full throttle.

Specification

The leading particulars of the "F.12" engine are:

	F.12.A
No. of cylinders	12
Bore	5 ins.
Stroke	5.5 ins.
Normal B.H.P.	490
Normal speed (crankshaft)	2,250
Maximum speed	2,500
Normal speed of propeller	1,244
Reduction gear ratio	0.552
Compression ratio of engine	6:1
Fuel consumption in gallons per hour at normal power and speed	30
Oil consumption in pints per hour	5
Weight of engine, including carburettors, magnetos, engine feet, reduction gear, and airscrew hub, but excluding exhaust boxes, radiator, airscrew, oil, fuel and water in lbs. ..	865 lbs.

Taking Over:
A new Avro
"Avian" going
through its
acceptance test
with Miss
Winifred Brown
on board, who
afterwards purchased it. She is a member of the Lancashire Aeroplane Club and learned to fly as such. One of her recent flights was to Croydon from the north, on the occasion of the visit of the King of Afghanistan.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

THE COMMITTEE—APRIL 25, 1928

Present :—Lieut.-Col. M. O'Gorman, C.B., in the Chair; Griffith Brewer, Captain R. J. Goodman-Crouch, Brig.-General Sir Capel Holden, K.C.B., F.R.S., E. J. B. How, Lieut.-Col. Sir Francis K. McClean, A.F.C., Lieut.-Col. J. T. C. Moore-Brabazon, M.C., M.P., Major H. A. Petre, D.S.O., M.C., Captain C. B. Wilson, M.C., H. E. Perrin, Secretary.

Chairman : Brig.-General Lord Thomson, P.C., C.B.E., D.S.O., was unanimously elected Chairman of the Club for the year.

Vice-Chairman : Lieut.-Col. M. O'Gorman, C.B., was unanimously elected Vice-Chairman of the Club for the year.

The following Sub-Committees were appointed :—

Racing Committee : Air Vice-Marshal Sir W. S. Brancker, K.C.B., A.F.C., Lieut.-Col. W. A. Bristow, Lieut.-Col. M. O. Darby, O.B.E., Colonel F. Lindsay Lloyd, C.M.G., C.B.E., C.B.E., Major R. H. Mayo, O.B.E., Captain C. B. Wilson, M.C., and the following representing the General Council of Associated Clubs :—J. F. Leeming (Lancashire Aero Club), Mr. R. J. Parrott (Hampshire Aeroplane Club), Colonel the Master of Sempill (London Aeroplane Club).

Technical Committee : Major T. M. Barlow, Major J. S. Buchanan, O.B.E., R. S. Capon, Squadron-Leader T. H. England, D.S.C., W. O. Manning, Major R. H. Mayo, O.B.E., Lieut.-Col. M. O'Gorman, C.B., Lieut.-Col. H. W. S. Outram, C.B.E., Squadron Leader M. E. A. Wright, A.F.C.

Private Owners' Committee : Captain S. J. Burt, Captain G. De Havilland, G. Merton, Major H. A. Petre, D.S.O., M.C., Miss W. E. Spooner, Flight-Lieut. F. O. Soden.

House Committee : Ernest C. Bucknall, Major H. J. Corin, F. P. Dickson, E. J. B. How, D. C. MacLachlan, J. Stewart Mallam, Major H. A. Petre, D.S.O., M.C., Major S. V. Sippe, D.S.O.

Finance Committee : Griffith Brewer, Ernest C. Bucknall, Lieut.-Col. M. O. Darby, O.B.E., J. Stewart Mallam, F. Handley Page, C.B.E.

Schneider Trophy Race, 1929

Royal Aero Club : Lieut.-Col. W. A. Bristow, Lieut.-Col. M. O. Darby, O.B.E., Lieut.-Col. M. O'Gorman, C.B., Captain C. B. Wilson, M.C.

Air Ministry : Major J. S. Buchanan, O.B.E., R. H. S. Mealing, Wing-Commander S. W. Smith, O.B.E.

S.B.A.C. : Commander James Bird, H. Burroughs, H. T. Vane.

Joint Standing Committee (R.Ae.C. and S.B.A.C.) : Air Vice-Marshal Sir W. S. Brancker, K.C.B., A.F.C., Lieut.-Col. M. O'Gorman, C.B., Lieut.-Col. Sir Francis K. McClean, A.F.C., Captain C. B. Wilson, M.C.

Joint Standing Committee (R.Ae.C., R.Ae.S. and S.B.A.C.) : Lieut.-Col. M. O'Gorman, C.B., Major H. A. Petre, D.S.O., M.C., Captain C. B. Wilson, M.C.

Associated Clubs' General Council : Lieut.-Col. M. Darby, O.B.E., Lieut.-Col. Sir Francis K. McClean, A.F.C., Lieut.-Col. M. O'Gorman, C.B., F. Handley Page, C.B.E., Major H. A. Petre, D.S.O., M.C., Colonel the Master of Sempill, Brig.-General Lord Thomson, P.C., C.B.E., D.S.O.

Flying Services Fund : Lieut.-Col. A. Dore, D.C. MacLachlan, Major H. A. Petre, D.S.O., M.C.

Stewards.—The following were elected Stewards of the Club for the year 1928 :—Brig.-Gen. The Duke of Atholl, K.T., G.C.V.O., C.B., D.S.O.; The Rt. Hon. Lord Hugh Cecil, M.P.; Brig.-General Sir Capel Holden, K.C.B., F.R.S.; Lieut.-Colonel J. T. C. Moore-Brabazon, M.C., M.P.; Lord Cozens Hardy.

Banquet to Mr. A. V. Roe.—The proposal that the Royal Aero Club, the Royal Aeronautical Society, the Air League of the British Empire, and the Society of British Aircraft Constructors should give a Joint Banquet to Mr. A. V. Roe, in recognition of his pioneer work and the great debt which British aviation owes to him during the past twenty years, was unanimously agreed to. The date will be announced later.

Election of Members.—The following members were elected :—Lieut. Robert S. D. Armour, R.N., Sidney George W. Blythe, A. H. Downes-Shaw, Flying Officer C. F. Steventon, Charles William Wimbury.

Aviators' Certificates.—The following Aviators' Certificates were granted :—

8235	Colin George Holbeche ..	Granted on R.A.F. Graduation Certificate.
8236	Clifford Robert Eugene Downing	Scottish Flying Club.
8237	Christopher Lincolne Sutton	De Havilland Flying School.
8238	Thomas Crabtree ..	Henderson Flying School.
8239	Edward Ellis Linaker ..	Henderson Flying School.
8240	Henry James Cumming-Lathey	Henderson Flying School.
8241	Max Christian Wall ..	Henderson Flying School.
8242	Andrew Wallace Young ..	Scottish Flying Club.
8243	Maurice Bevan Shepherd ..	Hampshire Aeroplane Club.
8244	James Tate Percy ..	Newcastle-upon-Tyne Aero Club.
8245	Arthur James Morton McCabe	Henderson Flying School.
8246	Joseph Price de Pledge ..	Newcastle-upon-Tyne Aero Club.
8247	John Lloyd Browne ..	Newcastle-upon-Tyne Aero Club.
8248	Walter Leslie Runciman ..	Newcastle-upon-Tyne Aero Club.
8249	Nicholas Horn ..	Newcastle-upon-Tyne Aero Club.
8250	Hector Cornelius Mack ..	Norfolk & Norwich Aero Club.
8251	Rowland Edward Frederick Potter	Norfolk & Norwich Aero Club.
8252	Ronald Eltringham Alderson	Newcastle-upon-Tyne Aero Club.
8253	Richard Francis Turney Granger	Nottingham Aero Club.
8254	George Pearson Glen Kidston	Hampshire Aeroplane Club.
8255	David Gardner ..	Scottish Flying Club.
8256	James Arnold Brewster ..	London Aeroplane Club.
8257	James Rodger Brown ..	Suffolk Aeroplane Club.
8258	Alfred Ernest Arnold ..	Bristol & Wessex Aeroplane Club.
8259	George Edwin Brooks ..	Newcastle-upon-Tyne Aero Club.
8260	David Barclay ..	Scottish Flying Club.
8261	John Gordon Crammond ..	London Aeroplane Club.
8262	Dudley Carlton Gerrard ..	Lancashire Aero Club.
8263	John Lionel Clayton ..	Yorkshire Aeroplane Club.
8264	William Leslie Maurice O'Connor	London Aeroplane Club.
8265	Robert Keith Sharp ..	Scottish Flying Club.

Offices : THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.
H. E. PERRIN, Secretary.

Prince of Wales Allotted Aeroplane

AN R.A.F. Bristol Fighter fitted with the Handley-Page slotted wing device has been placed at the disposal of the Prince of Wales as he requires it. It will be available at

Northolt, Middlesex. No special pilot has been selected, and any experienced pilot on duty will be called upon. The Prince of Wales is a Group Captain of the R.A.F. He visited Northolt on April 27 and flew in a Bristol Fighter.

PRIVATE FLYING

A Section of FLIGHT in the Interests of the Private Owner, Owner-Pilot, and Club Member

AERODROMES OF ENGLAND

THERE are approximately one hundred private owners of aircraft registered in this country to-day. This, incidentally, is nearly 75 per cent. more than the public understands if it noticed the number widely circulated in the daily press a few weeks ago.

It is anticipated that private flying will attract a greater following than ever this summer. Simultaneously, the necessity for more aerodromes and landing fields becomes more acute. There are signs that this is being widely realised amongst the community even beyond the sphere of aviation. To point to one instance, only two weeks ago Maj. B. F. S. Baden-Powell, in a letter to *The Times*, urged the provision for aircraft developments in town-planning schemes. On all the plans he had seen this had not been done. Roads ran through flat country which would otherwise be useful, and buildings were erected over suitable aircraft sites which could easily be moved elsewhere. It looked, he said, as though shortly every open space of any size within a mile

or two of a town would be split up. He also thought that it will be necessary for the Air Ministry to take an interest in town-planning and give technical guidance where aerodromes are contemplated, as they will have their military value.

With regard to this suggestion of Maj. Baden-Powell's, we are able to point out that the Air Ministry already gives their experienced advice on the subject to local authorities, although, as yet, they do not lay down any official conditions. The position is that if any town wants guidance the Air Ministry will willingly give it.

His letter produced a very interesting reply from the Town Clerk of Bristol, Mr. Josiah Green, revealing that his district will most probably, on the recommendation of Prof. Abercrombie, allot land for aircraft traffic. Further, in a second scheme it is proposed to provide for the extension of an existing aerodrome by preserving land for this purpose, altering existing roads and planning new roads.

On August 18, 1927, we published a map in "Flight" showing all the aerodromes in England and a few emergency landing grounds, in view of the increase of private flying, was then patent, so we have gathered by degrees a vast knowledge of all the fields which at some time during recent years have been licensed and used for flying. A careful investigation, which included personal inspection, quickly eliminated scores of fields, but out of the residue there are many worth rescuing and bringing to the notice of private owners. The first small batch selected will be found marked on this new map, with fuller particulars in the accompanying article. Others, we hope, will follow in due course as they survive thorough scrutiny. All will have the virtue, as far as the owners or tenants can foresee, of being permanent pasture. We again include existing aerodromes in our map as there have been a few changes. Certain Air Force landing fields are deleted, as promiscuous landings are not desired on them.



The important discussion then drew a valuable contribution from such an authority as Capt. G. de Havilland, who, we believe, never travels any distance over ten miles except by air. He pointed out the truism that this country does not realise how rapidly flying is increasing, and advised municipalities to tackle the problem of catering for it whilst it can be done easily. Capt. de Havilland also gave the following broad specification of the minimum requirements for an aerodrome used by normal civil aircraft:—

(1) The approach from all sides must be free from obstacles such as high buildings and trees for a distance of 500 yards from the landing-ground proper. (2) The landing ground proper to be approximately 450 yards square and of reasonably flat surface. (3) It should be as near a town as possible, preferably bordering a road. (4) It should be near a garage and telephone. (5) Shed accommodation is not essential in the early stages.

Now, whilst this essential agitation for aerodromes and mere landing fields is proceeding, the growing list of private owners shows that more and more flying is being done, which means, of course, that makeshift landing grounds are being used if the flying is not confined to aerodrome areas. These temporary grounds are, naturally, very valuable in this age of no aerodromes. The owners are broad-minded people who can realise the fundamental necessity of an aeroplane coming down sometimes, and they are quite agreeable to their land being used if it is treated reasonably. They do not advertise the fact because they do not wish to make money out of air traffic.

Therefore, to make known such available emergency fields is, we feel, of benefit to private owners. Accompanying this article will be found a few. We have collected notes of a vast number of fields covering most of England and Scotland that have at some time been licensed temporarily for flying and used. They are mostly within reasonable distance of a town. But so many of their advantages are outweighed by their disadvantages where private flying is concerned.

It is true that they have had to conform to certain conditions before their use was sanctioned, yet in face of that we know that many do not offer that margin of safety necessary for the private owner, whose experience is often small. Our commercial pilots, whose daily business is flying, may take off successfully from most of them, but many of us would rather be excused; even in the same powered machines.

There are many other considerations, however, that do not make all these fields suitable for recommendation. It is not merely sufficient to be able to land. It is necessary for the comfort of air touring to know which fields can be used with the owners' consent. Of the fields we publish here we are assured that the owners are quite agreeable to aircraft landings for temporary purposes, and the fields are likely to be permanently available. They are not all as large as desired but we think it is essential to study the interest of the most experienced private owner as well as that of the least experienced. There is no reason in withholding information from the former because it cannot be recommended to the latter. If particulars of a field are known it is left to the pilot to decide whether it is negotiable for him. It should be noted that the fields recommended here are not in any way under the responsibility of the Air Ministry.

Emergency Fields

Blackheath, Colchester, Essex.—Polo ground, 2½ miles from Colchester on east side of Colchester-Mersea Road, at junction of Donyland Heath Road. Size 400 × 600 yards.

Remarks.—No trees or other obstacles within 100 yards. Owner, War Office. Tel. nr. Ground fairly even.

Budleigh Salterton, Devon.—The Warren, 2 miles

south-east of town, nr. E. Budleigh-Exmouth-Budleigh Salterton Road junction. Size, 200 × 300 yards.

Remarks.—Smooth pasture. Owner, Mr. Sellick, South Farm, nr. Budleigh Salterton.

Bradford, Yorkshire.—Field, 2 miles east of Bradford nr. railway. Size, 35 acres.

Remarks.—Permanent pasture, surface uneven. Tel. wire, north side. Owner, Mr. Driver, Quarry Gap Farm, Tyersall Bradford.

Bath, Somerset.—V-shape field, 2 miles north-west of town, opposite Beckford Monument. Size, 1,000 × 700 yards.

Remarks.—Permanent pasture. Owner, Mrs. Allen, Enleigh House, Lansdown, Bath. Garage, 2 miles. Buses pass field.

Bekesbourne, Canterbury, Kent.—Ex-R.A.F. aerodrome with large sheds. 4 miles east-south-east of Canterbury.

Remarks.—Used by a private-owner, Dr. Whitehead Reid of Canterbury.

Cromer, Norfolk.—Field, 3 miles north-west of Cromer church, nr. Beston Regis church. Size, 300 × 300 yards.

Remarks.—Smooth permanent pasture. Owner, Mr. J. Gray, Beston Common, Sheringham, Norfolk.

Dorchester, Dorset.—Field, 1½ miles east, on west side of Dorchester-Piddletown Road. Size, 400 × 300 yards.

Remarks.—Permanent pasture. Owner, Mrs. Hull, Stinsford, Dorset. Garage, 1 mile. Buses pass field.

Falmouth, Cornwall.—Field, 1 mile north-west of town on Falmouth Road. Size, 275 × 265 yards.

Remarks.—Smooth pasture, probably permanent. Owner Mr. W. Dunstan, 59, Bacon Street, Falmouth.

Harrogate, Yorkshire.—The Stray. Field, ¼ mile south-east of Harrogate, east of North Eastern Railway line. Size 500 × 375 yards.

Remarks.—Rough pasture. Choice of two fields practically adjoining. Owned by the Harrogate Corporation.

King's Lynn, Norfolk.—Field, 1 mile south-east of King's Lynn, in angle formed by railway lines. Size, 450 × 300 yards.

Remarks.—Smooth permanent pasture. Deep open ditch north end. Owner, Mr. Richmond, King's Avenue, Exton Place, King's Lynn.

Ripon, Yorkshire.—Field, 1½ miles south of Ripon. Size, 250 × 300 yards (16 acres).

Remarks.—Rough pasture, sloping to the east. Farm buildings on east side. Owner, Mr. J. Gatenby, Chapelgati Farm, nr. Ripon.

Swindon, Wiltshire.—Field, 1½ miles south of Swindon on Swindon-Wroughton Road. North of Black Horse Inn. Size, 400 × 500 yards.

Remarks.—Permanent pasture. Owner, Mr. F. J. Gosling, Artis Farm, Wroughton, nr. Swindon. Garage, 1 mile.

Tewkesbury, Gloucestershire.—Field, ½ mile north of Tewkesbury. River Severn abounds on south and east. Size, 600 × 500 yards.

Remarks.—Permanent pasture. Owner, Mr. R. Green, Lion House, Barton Street, Tewkesbury. Has no objection to emergency landings unless cattle about. Garage, ½ mile. Buses pass field.

Weymouth, Dorset.—Field, 2 miles north-north-west on main Weymouth-Wareham Road. Size, 500 × 500 yards.

Remarks.—Landings good in any direction. Garage on south of site. St. John's Church spire, 1½ miles south. Owners, Weymouth Bay Estate Co., Preston, Dorset.

York, Yorkshire.—Field, part of Knavesmire racecourse on south side. Size, 1 mile × ½ mile.

Remarks.—Smooth, permanent pasture. Grand stand on east side—100 ft. high. Communications to Town Clerk Guildhall, York.

Aerodromes of England

THERE is local agitation in Northampton for the construction of an aerodrome. It is the geographical centre of England.

An "Air Week" for Edinburgh

THE Edinburgh Aero Club is promoting an "Air Week" at Edinburgh from May 14 to May 19, in connection with their appeal for funds for the purchase of two machines. During this week, flights by light aircraft over the city will be made; talks on civil aviation will be given to stimulate interest in the subject; demonstrations of light aeroplanes will be made at Turnhouse Aerodrome; and free flights are being arranged as well as intensive aerial advertising. In addition, a Ball will also take place at the Edinburgh Palais

de Dance on May 18. We hope to publish further details of this "campaign" later, and in the meantime we wish the Edinburgh Aero Club every success in their venture.

Landing Ground for Hull

DURING the Duke and Duchess of York's official reception at Hull on April 28, it was revealed by Principal Morgan that plans for the University College buildings include the provision of a landing field for the use of air visitors on their way to the University site.

D.H. "Moths" for Australia

THE Commonwealth Government has ordered 34 D.H. "Moths" for the Royal Australian Air Force. Twenty are to be constructed in England, and the remainder, except for the engines, in Australia.

LADY BAILEY'S SOUTH AFRICAN FLIGHT

THE Hon. Lady Bailey maintains her prominence as a private owner with her solo flight from England to Cape Town. She is the first lady pilot to accomplish this flight alone, and only once before has a light aeroplane covered the whole route. A D.H. "Moth" ("Cirrus") has figured on each occasion. Lady Bailey covered about half her trip without the slightest difficulty, then at Cairo a few troubles began. There came an unexpected ban on her proceeding across the danger zones in the Sudan without escort. Lieut. Bentley, as previously recorded, came to the rescue.

Lady Bailey left Croydon on March 9. In her machine, fitted with the A.D.C. "Cirrus" 30-80 h.p. engine, an extra petrol tank had been installed in the front cockpit. This made possible non-stop flights of 10 hours. Only two small suitcases comprised her personal luggage. The first landing after leaving Croydon was at Sacy le Petit (Oise) owing to fog. Paris was reached the following day. Immediate progress was then checked by snowfalls, but after getting away Lady Bailey arrived at Lyons, March 11, having encountered a little difficulty with a faulty compass. In face of a strong mistral Marseilles was made on March 12. On her departure the same day for Pisa and Rome at noon a number of pilots gave her an aerial farewell. Then came Naples, March 13, and Catania on March 14, and after a stage of 115 miles on March 15, Lady Bailey descended at Malta. The sea trip across to the North African coast was flown on March 16, the landing being effected at Homs. There, after re-fuelling, she flew to Tripoli. On March 18 Aboukir was reached, and Cairo two days later.

When arrangements for the escort by Lieut. Bentley were decided, Lady Bailey went on to Luxor on March 27, Aswan March 29, and later to Wady Halfa through a sandstorm and in intense heat. That storm blotted out the ground, and thus left no choice had an emergency landing been necessary. The stage took 125 minutes. On March 31 came

Atbara and Khartoum on April 2. There Lieut. Bentley joined her for the continuation on April 5, and provided an escort as far as Nimule.

With so much of the 8,000-mile flight successfully achieved, Lady Bailey had the misfortune to crash at Tabora on April 8. It was stated that she had no map of the Kisumu-Tabora stage, and flew to Nzega but found no possible landing ground. Turning back to Shimyanga, she landed there to inquire her way and then flew on to Tabora. This delay caused the arrival at the latter place during the hottest part of the day, when the air was very bumpy. The aerodrome there is 4,000 ft. above sea level. Lady Bailey thought she took insufficient notice of these conditions. Her landing was heavy and the machine turned over, breaking the fuselage and a spar. The engine and petrol tanks were saved. It seems that an approach to the aerodrome on the west side would be easier if a gap were cut in a row of trees. Another D.H. "Moth" became at Lady Bailey's service in a short time through the D.H. "Moth," agent in S. Africa, Mr. J. H. Veasey. It was flown from Roberts Heights to Tabora by Major Meintjes. About April 20 the flight was continued to Broken Hill and, four days later, in spite of an attack of influenza, she got to Livingstone. A strong wind troubled the next stage to Bulawayo on April 25. Nine machines gave an escort on the arrival at Pretoria on April 27.

Just after noon, April 30, the 8,000-mile lone flight was completed at Cape Town, later than anticipated. Baffling winds and cloud had impeded the final stage from Beaufort West. Two machines went up to escort the D.H. "Moth" but failed to sight it in the clouds. Sir Abe Bailey was the first to greet his wife. The Mayor was present also, as well as many representatives of the local club. A return flight to England is anticipated, providing the Egyptian Government will sanction her flight over the Sudan.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.

Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Capt. C. F. G. Crawford, Filton Aerodrome, Patchway.

Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.

Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, A. H. Bell, c/o The Club.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Manager, F. Gough, The Aerodrome, Mousehold, Norwich.

Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria Street, Nottingham.

The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.

Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.

Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending April 29.—Flying time, 52 hrs. 15 mins. Dual instruction, 41 hrs. 45 mins.; solo flying, 10 hrs. 30 mins.

Dual instruction.—With Capt. S. L. F. St. Barbe: A. L. A. Petty, B. Merry, G. Lyon, E. K. Blyth, E. A. Lingard, R. Richmond-Brown, R. Ward, J. C. V. K. Watson, Mrs. Fraser, E. R. Andrews, Lord Carlow, Miss Wilson, A. J. Mulder, F. C. Fisher, L. G. Sykes, G. Black, D. Green. With F. R. Matthews: A. P. Glenn, J. D. M. Robinson, S. Hansel, A. O. Wigzell, A. S. Richardson, Miss Wilson, T. A. Browne, J. A. Murphy, H. R. Presland, B. L. Middleton, L. W. Gibbens, H. Sutton, R. Richmond-Brown, Miss Fletcher, A. J. A. Miller, S. M. Nesbitt, G. C. Gotheridge, R. Anderson, A. Mason.

Solo flying.—G. H. Craig, E. E. Stammers, Maj. R. M. S. Veal, J. A. Brewster, R. Ward, R. Sanders-Clark, B. B. Tucker, M. L. Bramson, E. E. Fresson, Will Hay, F. C. Fisher, L. W. Gibbens, P. W. Hoare, G. Black, E. C. T. Edwards, D. H. P. Esler.

Accident to G-EBMP.—G-EBMP met with an accident on Saturday last, while being flown by Mr. G. Black. A new undercarriage and possibly two new wings will be required.

Future Policy of the Club.—The members will have received the circular setting out the proposals put forward by the committee, and calling a meeting of the members for Monday next, May 7, at 6 o'clock, at the Royal Aeronautical Society, 7, Albemarle Street, London, W.1. It is hoped that all members will make a special effort to attend this meeting.

Bristol Air Pageant.—The Bristol and Wessex Aeroplane Club have kindly granted free admission to the members of the London Aeroplane Club to the Air Pageant to be held at Filton Aerodrome, near Bristol, on Saturday next, May 5. Members must produce their membership badges at the entrance gate to the aerodrome.

HAMPSHIRE AEROPLANE CLUB

TOTAL time for the month of April, 153 hrs. 15 mins. Dual instruction, 61 hrs. 25 mins.; "A" pilots, 43 hrs. 55 mins.; solo, 19 hrs. 45 mins.; passenger flights, 23 hrs. 20 mins.; tests, 4 hrs. 50 mins.

Report for week ending April 29.—Total flying time, 57 hrs. 20 mins. Dual instruction, 21 hrs. 30 mins.; "A" pilots, 17 hrs. 45 mins.; solo, 4 hrs. 35 mins.; passenger flights, 12 hrs. 20 mins.; tests 1 hr. 10 mins. Instruction with Flight-Lieut. Swaffer.—Messrs. Watson-Taylor, Nash, Kimmins, Parker, Sir T. Munro, Messrs. Craske, Endicott, Molyneux, Brewster, Powell, Shreiber, Crook, Tillard, Whittle, Maj. Yeats-Brown, Westlake, King, Goldman, Perfect, Donner, Colls, Wroughton, Heath,

Hamilton, Mandeville, Courtney, Hoffman, Miss Grace, Scott-Hall, F/O Locke.

"A" Pilots.—Capt. Kirby, Lieut. Kimmins, Mr. Baynes, Mr. Fry, Mr. Heath, Mr. Bowen, Lieut. Oliver, Mr. Falconer, Lieut. Fagan, Mr. Panker, Don Cierva, Leech.

Soloists.—Mr. Yeatman, Mr. Rayson, Mr. Watt, Mr. Powell, Mr. Watson-Taylor, Mr. Tillard, Mr. Perfect, Mr. Lowe-Wilde, Mr. Shepherd, Mr. Musslewhite, F/O Locke, F/O Haytor, Mr. Watt.

Passengers.—With Lieut. Kimmins: Miss Hodges. With Flight-Lieut. Swaffer: Mr. Vernon, Miss Beatty, Mrs. Fenton, Master Waite, Miss P. Roe, Miss E. Roe, Miss Page, Master Page, Miss Roe. With Capt. Kirby, Mrs. Swaffer, Mr. Hamilton, Mr. King, Mr. Banerman, Miss Calthrop, Miss Godfrey, Mr. Martner, Mr. Lenny, Mr. Wroughton, Mr. Bound, Master Bennet, Mr. Harrington, Miss Turner, Mr. Bridcott, Mr. Hopkinson, Mr. Starkey, Mr. Grant, Mrs. Woolerton, Comdr. Woolerton, Lady Munro, Mrs. Bishop, Mrs. Crook, Miss Wheeler Elderton. With Mr. Panker: Mr. Curtis-Nuthall. With Lieut. Fagan: Mr. Felix Watson-Taylor, Mr. Bishop. With Mr. Oliver: Mr. Mandeville. With Mr. Bowen: Mr. Millor.

We have broken several records for the club this month. It has been a record flying month, i.e., 153 hours, with a record week of 57 hours, one record day of 16½ hours, with a record soloist solo after 3 hrs. 15 mins. dual instruction.

Our "Avian" has had a gruelling time, and has stood up splendidly to the test, and except when being refilled, has been in the air constantly for three months with never a breakdown. Our two "Moths" have had their share of the work, but all dual is done on the "Avian" and it stands the shocks of hundreds of landings each week.

Mr. Tillard did a successful solo after 3 hrs. 15 mins. dual. Mr. Watson-Taylor also successfully completed a circuit and landed for the first time alone.

LANCASHIRE AERO CLUB

REPORT for week ending April 28.—Flying time, 44 hrs. 50 mins. Instruction, 18 hrs. 25 mins. Solo flights, 17 hrs. 5 mins. Passenger, 8 hrs. 15 mins. Tests, 1 hr. 5 mins.

Instruction (with Mr. Baker).—Chart, Sellers, Weale, Stern, Benson, Miss Hill, Eills, Miss Baerlein, Greenhalgh, Harrison, Riley, Taylor, Goss, Birley, Garner, Secker, Taylor, J. Mason. (With Mr. Patricieux): Johnson, Tweedale, Gort, Barlow, Watson, Miss Emery, Mills. (With Mr. Cantrill): Cohen, Barlow, Miss Emery, Slack, Mason, Weale. (With Mr. Scholes): Fallon, Goss.

Soloists (under instruction).—Gort, Brooking, Mills, Gerrard, Tweedale. Pilots.—Cohen, Hall, Williams, Harber, Davison, Crosthwaite, Gattrell,

Lacayo, Twemlow, Hardy, Cantrill, Birley, Caldecott, Michelson, Nelson, Goodfellow.

Passengers (with Mr. Cantrill): Wing-Comdr. Smith, Meads, Goodfellow; (with Mr. Baker): Mrs. Garner, Mrs. Bowdon, Miss Bentley and Smith; (with Mr. Williams): Miss Elburn, Garner, Drake and Stern; (with Mr. Lacayo): Gerrard; (with Mr. Goodfellow): Miss Coombes, Miss E. M. Coombes, Cantrill and Birley; (with Mr. Meads): Goss, Weale and Griffiths; (with Mr. Twemlow): Gerrard and Mortimer.

Except for rather high winds the weather was good and but for minor troubles, mostly connected with tail-skid fittings, it might have been a record week.

Messrs. Brookings and Mills accomplished their height tests with distinction.

Messrs. Goodfellow and Cantrill flew over to Blackpool, where they met Air Commodore Holt, Wing Commander Bradley, Squadron Leader d'Albiac and Flt./Lt. Carr to discuss the R.A.F. Pageant at the Blackpool flying meeting. A definite decision as to the exact number of R.A.F. machines which will be taking part will not be made till the rolling of the ground is completed, but there is every indication of a "wizard" show.

MIDLAND AERO CLUB LIMITED

REPORT for week ending April 28.—Total flying time, 29 hrs. 17 mins. Dual instruction (with F./Lt. T. Rose, D.F.C.): E. P. Lane, W. M. Morris, S. G. Hall, E. D. Wynn, K. W. Symington, S. Duckitt, R. H. Drury, R. L. Brinton, O. L. Richards, G. E. C. Hill, G. H. Aldridge, G. Robson, H. Coleman, Capt. H. G. E. Tower, H. Tipper.

Solo: R. D. Bednell, E. J. Brighton, H. Tipper, C. W. Fellowes, G. H. Aldridge, J. Rowley, W. Swann, G. Robson, R. L. Jackson, H. J. Willis, E. D. Wynn, S. H. Smith, J. R. H. Baker, W. Ellison, R. L. Brinton, A. B. Gibbons.

Passengers: L. V. Mann, M. Turner, H. H. Kelley, J. J. Robinson, H. E. Dennison, A. Methley, M. Clausen, S. H. Smith, E. M. Kerr, J. L. Gilbert.

On Sunday Messrs. G. H. Aldridge, J. R. H. Baker, and E. D. Wynn successfully passed the flying tests for their aviators' certificate and on Thursday, Messrs. G. Robson, A. B. Gibbons and A. Ellison also passed the tests.

Messrs. Baker and Aldridge have joined No. 605 County of Warwick (Bombing) Squadron Auxiliary Air Force.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending April 29.—Total flying time, 34 hrs. Dual instruction, 10 hrs. 45 mins. Solo training, 3 hrs. 5 mins. "A" Pilots, 18 hrs. Passengers, 55 mins. Tests, 1 hr. 15 mins.

Dual instruction with Mr. Parkinson: Mrs. Kish, Miss Rambaut, Miss Klyver, Messrs. L. M. Middleton, Redshaw, White, Hayton, L. B. Dickinson, Cochran Carr.

Solo: Messrs. Brooks, Percy, Mehan, Dr. Alderson.

"A" Pilots: Mrs. Heslop, Miss Leathart, Dr. Dixon, Messrs. Heppell, Phillips, H. Ellis, Runciman, C. Thompson, D. Wilson, J. D. Irving, Stobie, N. S. Todd, Lloyd Browne, F. L. Turnbull, A. Bell.

Number of passengers—7.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending April 29.—Total flying time, 10 hrs. 50 mins. Soloists: Messrs. W. A. Ramsay, F. Gough, R. Potter, N. Brett, H. Mack, W. P. Cubitt, R. T. Harmer, H. A. Bank, G. Surtees.

Passengers, 21.

We have not been able to do a great deal of flying this week but with our instructor back we hope to make up for it next week. The ladies are getting quite keen on flying here now; we have had quite a lot up this week and they were all quite keen. Some would take it up seriously but there is a relentless husband, or father in the background. However, there is always hope.

SUFFOLK AND EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending April 21.—Flying time, 5 hrs. 25 mins. Instruction, 1 hr. 55 mins. "A and B" Pilots, 1 hr. 45 mins. Soloists, 55 mins. Passenger flights, 35 mins. Tests, 15 mins. Instruction—with Mr. G. E. Lowdell—8. "A and B" Pilots, 2. Soloists, 3. Passengers—with Mr. G. E. Lowdell—4.

Report for week ending April 28.—Flying time, 17 hrs. Instruction, 6 hrs. 55 mins. "A and B" Pilots, 3 hrs. 30 mins. Soloists, 2 hrs. 30 mins. Passenger flights, 3 hrs. 30 mins. Tests, 35 mins. Instruction—with Mr. G. E. Lowdell—9. "A and B" Pilots, 3. Soloists, 5. Passengers—with Mr. G. E. Lowdell—30. With Mr. C. N. Prentice, 1.

Mr. C. Hanson and Mr. F. Verney both made successful first solos during the week. The membership has increased by about 25 per cent. since the Display, and enquiries are pouring in. This is most satisfactory, and, as the club has now two machines, members are assured of ample opportunity to fly every day of the week except Friday.

Unfortunately we have one misfortune to record. Mr. Courtney N. Prentice, to whose energy and enterprise the club owes its formation, has been forced to resign the Hon. Secretaryship owing to the demands upon his time of his own business affairs. Fortunately, he will not be lost to the club as he still remains upon the Board of Directors.

Major P. L. Holmes, D.S.C., has been appointed Secretary. In future, all correspondence should be addressed to the Aerodrome, Hadleigh, Suffolk. Telephone, Hadleigh 57. Office hours will in future be from 2.30 to 5.30 p.m. daily, except Friday.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending April 28.—Flying time, 41 hrs. 5 mins. Instruction, 13 hrs. 25 mins. Soloists, 26 hrs. 25 mins. Passengers, 1 hr. 15 mins.

Instruction (with Captain Beck): Messrs. Upton, Senior, Bell, Gill, Goulden, Humphries, A. Crowther, Ostler, Collins, Clayton, Lupton, Fittin, Woolley, Bamford, Dane.

Instruction (with Mr. Stockbridge): Mr. Ostler.

Soloists: Messrs. Dick, Humphries, A. Crowther, H. Crowther, Birch, Ambler.

"A" Pilots: Messrs. Thomson, Mann, Clayton, Wood, Norway, Ellison, Lister.

"B" pilot: Mr. Fielden.

Passengers: 17.

This week has been the brightest yet in every sense of the word. Every day has been more or less flyable, and evening flying has proved itself extremely popular with our members.

RF and SV functioned perfectly, and our hours are compiled on these two machines with the exception of Saturday evening, when we had the use of TA kindly lent by the Blackburn Aeroplane Co.

We would like to draw attention that from now on flying will commence at 2 p.m. on Tuesdays, Thursdays and Saturdays, to enable the ground staff to compete with the maintenance work, as the machines are in use up till dusk.

FROM THE FLYING SCHOOLS

The De Havilland Flying School, Stag Lane Aerodrome

REPORT for week ending April 29.—Total flying, 181 hrs. 40 mins. Instruction: dual, 75 hrs. 5 mins.; solo, 68 hrs. 40 mins. Other flying, 37 hrs. 55 mins.

The outstanding feature of the week was the brilliant performance of the de Havilland "Hound" machine, which, piloted by Capt. H. S. Broad, captured three world air records for Great Britain.

Tests and demonstrations were continued with the "slotted winged" "Moth," and the new de Havilland four-cylindered "Gypsy" engine was also extensively demonstrated, to the very great satisfaction of all concerned.

Nine new "Moths" were tested and despatched, thereby rigidly adhering to our "Moth" production programme.

Our school has put in a really hard week's work, and there is every possibility of April's figures surpassing the best of any previous month. Certainly the number of flying aspirants shows an increase, which speaks well for the future of civil aviation.

The Hon. Lady Mary Bailey is to be heartily congratulated on reaching Cape Town, after many discouraging set-backs, which might have daunted many a more experienced pilot.

Henderson Flying School, Ltd., Brooklands Aerodrome.

REPORT for week ending April 25.—Total flying time, 45 hrs. 50 mins.

Dual with Mr. H. D. Davis: Messrs. Quilter, Hamilton, Mitchell, Whiteley, Hughes, Hsiao, Habsburg, Dr. Wall, Col. Rice and Mr. Worley.

Dual with Mr. A. E. Golds: Messrs. Payne, Mitchell, Col. Rice, Jonassen, Bellville, and Miss Kidstone.

Solo: Messrs. Whitley, Habsburg, Hamilton, Mitchell, Anderson, Jonassen, Dr. Wall.

Messrs. Jonassen, Whitley and Habsburg have now completed all their tests for the R.A.C. Licence.

We have now turned out eleven qualified pilots since January 1, 1928, and several soloists are almost ready to do their R.A.C. tests.

General Sir Sefton Brancker paid the School a surprise visit on Sunday, and showed much interest in our activities.

Another new machine is almost ready for maiden flight, and work is proceeding at record speed.

Early morning flying is now getting very popular, and at 7 a.m. machines are hard at work, the enthusiastic pupil then dons his city kit and returns for his second half-hour's flying about 6 p.m. The management has decided to continue this practice for the convenience of their London pupils, who usually stay the night in the bungalows provided on the aerodrome.

There are several talented musicians learning to fly, and an after-dinner Jazz Band helps to make things more pleasant.

THE BLACKPOOL AIR PAGEANT

ARRANGEMENTS for the Blackpool Air Pageant, which takes place on July 6 and 7, are proceeding apace, and it now promises to be the most important event of its kind in this country this year. It will be recalled that Blackpool led the way in flying in Great Britain with its pioneer meeting in 1908, and now, twenty years later, this resort is again to lead on the same ground—a fine open space at Squires Gate, on the South Shore.

The first day will be confined mainly to civilian flying, for this is the one meeting of the year at which every civilian club must be represented. Blackpool is being recognised as the official inter-club fixture, and each of the 19 clubs will send a strong contingent. Some of those from whom entries have already been received are:—

Bristol and Wessex Club.	Midland Aero Club.
Felixstowe Light Aeroplane Club.	Newcastle-on-Tyne Aeroplane Club.
Halton Aero Club.	Norfolk Aero Club.
Cinque Ports Flying Club.	Nottingham Aero Club.
Hampshire Aeroplane Club.	Private Owners Club.
Lancashire Aero Club.	Royal Aircraft Establishment Club.
London Aeroplane Club.	

Scottish Aero Club.
Severn Aero Club.
Suffolk Aero Club.

Yorkshire Aeroplane Club.
Liverpool and District Aero Club.

Entrants will race over a course of seven miles, and the events will include races, stunt flying, aerobatics, parachute descents, and so forth.

Imperial Airways are sending down some of their latest machines, and an International permit—the first granted in Britain since the War—has been issued, under which Fiesler, the great German Ace, will participate. Fiesler is essentially a stunt flyer, and performs feats which nobody else in the world has yet attempted.

July 7 will be mainly Royal Air Force day. It will be staged upon "Hendon lines," and will be the first "Hendon Day," as well as the biggest, ever arranged outside that famous meeting-place. About 350 R.A.F. officers and men are to attend. The chief officials at R.A.F. headquarters are taking great interest in this event, and are giving it every support.

There will be accommodation for 190,000 spectators, with ample car parks. Prices of admission will be from 1s. to 6s., and there will be continuous flying from 11 a.m. to 7.30 p.m.

FLYING-BOATS

Famous German Designer's Lecture to R.Ae.S. & I.Ae.E.

THE theatre of the Royal Society of Arts was packed on Thursday of last week, April 26, when the paper on "Flying-Boats" (the original German title was "Mitteilungen über eine Familie ähnlicher Flugboote"—Ed.) by Herr C. Dornier was read before the R.Ae.S. and I.Ae.E. Col. the Master of Sempill was in the chair, and explained that they were indebted to Major Low for the English translation of the paper. The lecturer spoke English very well, but was rather modest about it, and they had persuaded Mr. Bramson to read the paper for Herr Dornier, who, however, read the introduction himself. Mr. Bramson then read the paper and explained the lantern slides thrown on the screen.

It is quite impossible for us to give Herr Dornier's paper in full, and in particular because of the numerous diagrams and tables which accompanied it. These will be published in due course in the Society's Journal, and we must refer those of our readers who wish to study the paper in detail to that publication. In the meantime, by the courtesy of Mr. Pritchard, we have been permitted to examine the original tables, and we have extracted from these a certain amount of data, which we give in the tables published below. These tables, it should be pointed out, have been somewhat changed from the original ones. For instance, we have converted the metric units used in the original into the more familiar ft./lb. and miles units, hoping that thereby it would be simpler for our readers to see at a glance the main features of the family of flying-boats to which Herr Dornier's paper referred. Moreover, in our converted Table I we have taken the liberty of adding four columns, of which three were taken from Table VIII, while the fourth, that giving the power loading, was compiled by us in order to be able to compare the five machines on a basis of power loading also.

The first part of Herr Dornier's paper deals with the

flight for comparison. In Table VI the basis taken is 1.8 litres per h.p. installed (i.e., 3.17 pint). The manner of carrying out this reduction is shown in Tables V and VI. The tank weight falls off with size, from 0.07 kg./litre (0.7 lb./gallon) for type A, to 0.036 kg./litre (0.36 lb./gallon) for type E, as the tank capacity increases from 50 litres to 16,000 litres. A similar drop is found in the case of the oil tanks.

The last part of the paper deals with performance, i.e., with: 1, the variation of the ratio α = load/tare weight, that is, the disposable load per kg. of tare weight, or the reciprocal $1/\alpha$, that is the tare weight per kg. of disposable load; 2, the variation of the radius of action, or range, with size; and 3, the variation of the paying load with the range. The disposable load is defined as: total permissible gross weight — (tare weight + crew), and figures will be found in Table VIII. A few figures relating to speed, range and fuel consumption are given in Table IX, but this side of the problem was illustrated chiefly by graphs, which unfortunately are not available. For a range of 1,000 km. (erroneously given in the printed copy as 10,000 km.), type B has a disposable load of 332 kg., type C 1,351 kg., type D 2,411 kg., and type E 19,738 kg. In passing from type B to type E, the area is increased nine times, and the disposable load sixty times. With a range of 2,000 km. type C has a disposable load of 218 kg., type D 1,881 kg., and type E 13,378 kg. With an increase in area of 4.8 times, there is an increase in disposable load of 61 times. (Another and, perhaps, more illuminating, way of looking at this is to take the disposable load per h.p. of the engines. If that is done for a range of 1,000 km., it is found that the disposable load per h.p. is, for type B, 0.75 kg.; for type C 1.5 kg.; for type D 1.2 kg., and for type E 3.3 kg.—Ed.)

The remaining portion of the paper requires the use of the

TABLE I.

Type.	No. of Engines.	Total power b.h.p.	Total Wing Area Sq. ft.	Wing Span Ft.	Length O.A. Ft.	Height of Propeller above W.L. Ft.	Tare Wt. Lb.	Loaded Wt. Lb.	Wing Loading Lb./sq.ft.	Power Loading Lb./h.p.	Type Name.
A	1	80	166.8	32.1	24.5	2.36	1,122	1,473	8.78	18.4	Libelle
B	1	450	570.0	57.5	42.2	4.58	3,823	6,280	11.0	13.95	Do.E.
C	2	900	1,024	73.8	57.5	5.93	7,460	13,270	12.95	14.75	Wal.
D	4	2,000	1,547	94.0	80.8	7.35	16,200	31,000	20.0	15.5	Superwal.
E	12	6,000	5,032	—	131.0	21.2	54,900	113,300	22.5	18.8	Do. X.

Type A has Siemens engine; the other types have Gnome-Rhone "Jupiters." The columns giving tare weight, loaded weight, wing loading, and power loading, have been added by us.—Ed.

general design and construction of the five Dornier flying-boats which form the basis of the paper. Most of the essential data are contained in our Table I, but it might be pointed out that type A had folding wings, a feature not possessed by any of the other four boats.

Table II contains a detailed statement of item weights of the five boats, the items being divided into three groups: aircraft, power plant, and instruments and equipment, which three together give the tare weights of the five boats. In each group details are given of the various items composing the group, and the item weights are given, as well as the percentage weight which each item forms of the total group weight. This table is most informative, and we regret that we are not able to reproduce it.

Tables III, IV, V, VI and VII give data for the five machines of the boat structure weights, wing item weights, petrol and oil installation weights, and tail surface weights, etc. From Table III it is seen that with increase in size the percentage weight of frames and longitudinals increases, while the percentage weight of the skin decreases. The weight per cubic metre of the hulls drops from 29.85 kg./cub.m. (1.85 lb./cub. ft.) for the small boat, type A, to 18.83 kg./cub.m. (1.168 lb./cub. ft.) for the very large machine, type E, now under construction.

For the wings similar figures are given in Table IV, the specific weight rising from 6.97 kg./sq. m. (1.43 lb./sq. ft.) for type A to 15.97 kg./sq. m. (3.27 lb./sq. ft.) for type E.

Tables V and VI contain detailed data about fuel and oil installation weights. It is pointed out that the fuel and oil tanks actually installed in the different boats were not on a common basis, and had to be reduced to a standard time of

graphs thrown on the screen, and without them cannot usefully be summarised.

At the end of the lecture a series of lantern slides and cinematograph films were shown, illustrating the various types of Dornier flying-boats. The little "Libelle" caused much amusement by coming out of a harbour with its wings folded, the pilot then spreading the wings, opening up his engine and flying off. Some slow-motion films were most instructive, and certainly appeared to indicate that the Dornier boats are comparatively "clean" on the water. A tilt of the cine-camera caused the horizon to be tilted, and the sight of a large flying-boat slowly crawling up a hill of water caused a good deal of merriment. The manner of hoisting these big boats into their sheds by a simple tackle was impressive and very different from the usual business with slipways, beaching trolleys, and what not.

The Discussion

Col. the Master of Sempill, in opening the discussion, said it was a very great tribute to the Royal Aeronautical Society, and one not shared, as far as he knew, by any other in the world, that a designer of such importance as Herr Dornier should have agreed to come over here personally to give this very important paper. He reflected on the fact that the British Empire, much more than Germany, was in need of developing the flying-boat, and yet Germany, and in particular Herr Dornier, had shown them what very great developments had been made there, a fact which gave one much to think about. He would call on Lieut.-Col. O'Gorman to open the discussion.

Col. O'Gorman recalled the enthusiasm with which, in

his youth, he had read Jules Verne's tale of the gigantic gun which was to fire a projectile to the moon. The paper had given a somewhat analogous development, but with the difference that it represented reality and facts. He also mentioned that in this country a battle had been raging concerning the very large flying-boat, and whether it was a possibility or not. He was therefore glad that Herr Dornier had come over here to tell them that it was. Reference had been made in this country to a wing loading of, he thought, something like 30 lb./sq. ft. It was a little difficult to follow, on the slides which were in a rather unfamiliar form, the data as closely as one could desire, but he thought that the wing loading of the flying-boat referred to as the "E" type had not been given, and he would very much like Herr Dornier to inform them what this actually was. On the subject of ratio of machine weight to load carried, it appeared to him a phenomenal achievement, if it could be attained,

country we had developed Duralumin spars that were very satisfactory. The use of Duralumin made it possible to adopt laminated construction of the spars, thus tapering the thickness and proportioning it to the stresses at different points. He noticed that the lecturer had referred to the weight of paint and caulking. In this country, using a form of hull construction in which the skin was the main structure, no caulking was used between the overlapping edges of plates, and we found no difficulty in getting such a hull water-tight.

Mr. C. R. Fairey said he did not propose to criticise Herr Dornier's paper, but would criticise Col. O'Gorman instead. What he was referring to was the statement concerning carrying a pound load for a pound of aircraft. He thought that in this country a fairly usual structure weight was 28 to 30 per cent., which was considerably better than the pound per pound referred to by Col. O'Gorman.

TABLE VIII.

Type	Wing Area sq. ft.	Max. Gross Wt. G_z lb.	Overload Wt. G_o lb.	Normal loading lb./sq. ft.	Overload loading lb./sq. ft.	Overload $G_o - G_z$ lb.	Tare Weight R lb.	Crew B lb.	R + B lb.	Disposable load $G_z - (R + B)$ lb.	α	1 α
A	166.8	1,473	1,715	8.78	10.3	252	1,122	176	1,298	175	0.157	6.380
B	570.0	6,280	6,980	11.0	12.25	700	3,823	352	4,175	2,105	0.553	1.810
C	1,024	13,270	14,080	12.95	13.75	810	7,460	528	7,988	5,282	0.711	1.410
D	1,547	31,000	33,020	20.0	21.3	2,020	16,200	704	16,904	14,096	0.871	1.149
E	5,032	113,300	—	22.5	—	—	54,900	1,585	56,485	56,815	1.035	0.968

α = Disposable load/Tare Weight.

that whereas in the small machine it required about 6 lb. of aeroplane to carry 1 lb. of load, in the "E" type it took only 1 lb. of machine to carry 1 lb. of load.

Maj. Buchanan said he was very glad to find that Herr Dornier, like we in this country, believed in the big flying-boat. If he should succeed in attaining even approximately what he had aimed at it would be a very big achievement. There were one or two questions which he would like to ask the lecturer. For instance, there was the problem of tandem airscrews. Perhaps Herr Dornier could tell them something about the sort of efficiencies attained. In this country we had not found the tandem arrangement very good, losing something like 5 per cent. at top speed and even more at lower speeds. He noticed one of the machines with four air-cooled engines arranged in two pairs in tandem. Could the lecturer tell them something about his experience with air-cooled engines used as pushers? On the subject of the stub 'planes used for giving lateral stability on the water, in this country it had been found that at certain speeds these stub 'planes developed a period of lateral instability, which in some cases was sufficient to turn the machine over sideways. It would be interesting to have Herr Dornier's views on this subject, and the results of his practical experience.

Mr. Oswald Short said they had just listened to a paper which had rarely been equalled in interest in that room. He

TABLE IX.

Type.	Power. b.h.p.	Top Speed. m.p.h.	Cruising Speed. m.p.h.	b lb./mile.	Range. miles.	Reduced Range. miles.
A	80	85	68	0.482	365	365
B	450	101	87	2.115	1,000	973
C	900	119	99	3.73	1,415	1,363
D	2,000	137	105	7.81	1,810	1,730
E	6,000	149	115	21.65	2,635	2,510

b is the mean weight of petrol and oil consumed per mile at cruising speed.

hoped it would not embarrass the lecturer too much if he were to plead guilty to a good deal of hero worship where Herr Dornier was concerned. He (Mr. Short) had greatly admired his work for a long time, and it was worth bearing in mind that behind the developments which the paper outlined there was a long record of practical experience. In this country we had not yet had much experience of the very large monoplane, although machines were coming along. He also thought that the conviction was generally shared that the limiting size in flying-boats had not yet been reached. Whatever was the ultimate results of the very large boat now being built, and referred to in the paper as the type E, its realisation could not fail to be a very valuable experiment. On the subject of steel spars, he would like to ask Herr Dornier his reasons for choosing this material for spars. In this

(Actually, one imagines that Mr. Fairey and Col. O'Gorman were rather at cross purposes over this subject. On page 6 of the printed paper, reference is made to the ratio α = load/tare weight, or its reciprocal $1/\alpha$ tare weight per kilogram of disposable load. In the last paragraph on this page $1/\alpha$ is referred to again, but the text gives the expression "structure weight." We should think that this is an error, and that "tare weight" was meant. In the original manuscript of Herr Dornier's, which we have been privileged to see, the word "Reingewicht" is used in referring to α . Further down, however, the author uses the expression "Konstruktionsgewicht," which Maj. Low has quite correctly translated "structure weight." We fancy that Herr Dornier here uses the latter expression in the same sense as he previously uses "Reingewicht." Support of this assumption is lent by Table VIII, in which, in the original, α is definitely given in the penultimate column as $\frac{\text{Freilast}}{\text{Reingewicht}}$. In that case the ratio actually becomes, as evidently Col. O'Gorman meant, a pound of load for each pound of complete aircraft, and not for each pound of aircraft structure.—ED.)

Turning to the subject of multi-engines, Mr. Fairey pointed out that the multiplicity of engine controls might become a serious drawback, and he humorously referred to the work of operating all these engine controls by comparing the operator to a Paderewski at a piano. He would like to ask Herr Dornier whether 12 engines had been chosen for the type E because more powerful power plants were not available, or because the lecturer preferred the greater number of individual engines. The lecturer had referred to propeller clearance on this large machine. If the number of engines was reduced to six, for example, *i.e.*, the power of each engine unit doubled, that advantage would largely disappear, since airscrews of larger diameter would then be employed.

Mr. A. V. Roe would like to ask the lecturer whether his experience had indicated that the rear propeller was more likely to be damaged owing to its position aft of the wings. He would also like to know what wing loading the large machine (type E) would have.

Major Bumpus said he welcomed the paper as being the first concrete example of the possibilities of the really large machine. Like others who had taken part in the discussion, he would like to ask a few questions. For instance, was the large size made possible to some extent by a sensible reduction in load factors? He noticed that the Dornier machines had wings of rectangular plan form. In this country it was generally held that the tapered monoplane wing was the more efficient as with it one got a wing that was thick at the root and thus better able to resist the loads imposed. He would like to know what had been the lecturer's experience, and whether the parallel monoplane wing had been adopted for cheapness or for other reasons.

Mr. Wyn-Evans, of the R.A.E., would like information concerning the methods of stressing employed in these large

machines. He was aware of the methods established by several German experts, but thought that in this case certain assumptions as to stability of hull skin must have been made, giving a greater permissible stress intensity than usually thought practicable.

Mr. R. J. Mitchell said he was pleased to learn the views of so distinguished a specialist as regards increase in size. As far as his own personal experience went, and in spite of the views held by many theorists, he found himself in agreement with the lecturer. One subject had interested him considerably, *i.e.*, the placing of the fuel. In this country we usually placed it in the wings, but he noticed that in the Dornier machines the fuel was carried in the hull. Apart from fire risk, would the lecturer tell them whether this placing of the fuel was a result of the use of stub wings, with consequent necessity for keeping the centre of gravity low in order to retain lateral stability on the water. He would also like to have the benefit of Herr Dornier's experience on the question of corrosion.

Mr. J. D. North said he had been extremely interested in the paper. He was not a flying-boat designer, and had had but little seaplane experience. After the one he did have, when he came out of hospital (laughter) he turned his attention to aeroplanes. The figures given by the lecturer appeared to smack of heresy, but owing to the unfamiliar manner in which the statistics were presented, and the fact that the tables and figures were not given in the printed copy of the paper, it was very difficult to discuss the paper in any detail. The information contained in Herr Dornier's paper was very interesting, and was of a sort which was, unfortunately, very rarely given out.

Major Ledebore also regretted the absence of figures in the printed copy of the paper. It might appear churlish of them not to discuss and criticise the paper, but he thought the lecturer would understand that this was due to inability to do so under the circumstances. He referred to the need of a closer definition of the expression "seaworthiness," and personally he thought it ought to be treated under two headings: aerodynamic seaworthiness, which enabled a machine to take off and alight, and what might perhaps be termed constructional seaworthiness, which would enable a machine to ride out a heavy sea. He had noticed in the slides and films that Dornier boats were fitted with water rudders, and would like to ask whether this was necessary in the types fitted with wing engines, or whether it was retained because of its advantages

in taking off. Finally, he would like to congratulate Herr Dornier on having the courage of his convictions to the extent of actually building a very large machine.

Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, referring to the question of whether the stoppage of one engine meant alighting, said he had had personal experience of that in a Dornier Wal. On a flight in which he was on board the rear engine stopped, and the machine was able to continue to its destination with but one engine running. The question had been asked whether the stump wings gave sufficient stability on the water. Again, from personal experience he could assure them that they did. They also formed a very convenient platform for embarking and disembarking passengers. Turning to the question of monoplane or biplane, Sir Sefton said he had been rather in favour of the monoplane, but the technicians appeared to regard the biplane as being more efficient in sizes above 500 h.p. Concerning the new specifications for civil aircraft about to be issued, after hearing the lecture he would hold his hand and await developments. He hoped that Herr Dornier would some day pay a visit to London in the Superwal.

Replying briefly to some of the points raised in the discussion, Herr Dornier began by dealing with the subject of wing loading. In the type D this was in the neighbourhood of 100 kg./sq. m. (20.5 lb./sq. ft.). In the type E it would be something like 105-106 kg./sq. m. (21.22 lb./sq. ft.). He was not in favour of high wing loading, but saw no other possibility in the large machine if a reasonably useful load and speed were to be achieved. The tandem propeller arrangement was, he admitted, a little less efficient, but the practical advantages made it worth adopting. As regards the use of air-cooled engines as pushers, they had had experience of this only in winter, when it had not given any trouble. The stub wings, like other features, were a compromise. His reason for employing steel spars was mainly a personal preference. Mr. Roe had asked about the rear screws, and whether they were more liable to damage. They made the rear screws four-bladed and of smaller diameter, and did not then have any trouble. The rectangular wing had been adopted mainly because it was cheaper to construct. On the subject of hull strength, at present there was no uniform system of calculation in force in Germany, individual designers using their own methods. He thought the monoplane type was cheaper and easier to build until one came to really large sizes.

A. V. Roe & Co.

THE *Financial Times* learns that the rumoured acquisition of Crossley Motors holding in A. V. Roe & Co., Manchester, is on the point of becoming an established fact. The deposit in respect of the purchase price has been paid into the bank on behalf of the Armstrong-Siddeley Development Company, the Coventry company which controls Armstrong-Siddeley Motors and also Sir W. G. Armstrong, Whitworth Aircraft. No change in the management or personnel of A. V. Roe is contemplated.

Resumed Air Mail Routes

THE Postmaster-General announces that the despatch of letters and parcels by all the Air Mail routes which are shown as suspended for the winter on page 2 of the current Air Mail Leaflet (October, 1927 edition) were resumed generally on April 30. There will in some cases be slight variations from the routes as shown on the Leaflet, but the latest times of posting will not for the present be altered. A new edition of the Air Mail Leaflet will be issued shortly.

Schneider Trophy Donor Dead

M. JACQUES SCHNEIDER, the donor of the Schneider Trophy, for the international seaplane race, died on May 1, at the age of 50 years, at Beaulieu, where he had been staying for several months. M. Schneider, a French manufacturer, gave his trophy in 1913 for an international seaplane contest in which all-round seaworthiness rather than the speed of the aircraft entered was the main consideration. Since the war, however, the contest has become primarily one of speed, and the fastest aircraft in the world are entered for the race.

Death of a Well-known American Pilot

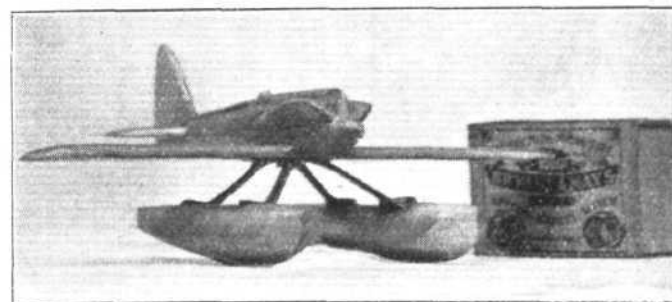
SORROW was felt throughout America at the death of Mr. Floyd Bennett from pneumonia at Quebec on April 25. He had flown from Detroit to Quebec with Mr. B. Balchen in the Ford relief 'plane with the intention of bringing the Atlantic airmen from Greenly Island. His illness, which began before he left Detroit, forced him to enter hospital. Col. Lindbergh made a hurried flight to Quebec with a special

serum, but it was of no avail. Mr. Bennett accompanied Commander Byrd on the North Pole flight in May, 1926, and had been chosen for the Commander's coming Antarctic expedition. He was buried in the national cemetery at Washington. The Atlantic airmen laid Irish and German flags on his grave.

Royal Air Force Flying Accidents

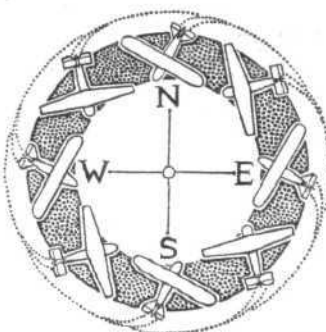
THE Air Ministry regrets to announce that as the result of an accident at Attock, India, to a D.H.9A machine of No. 27 (Bombing) Squadron, Risalpur, on April 25, 362706 L.A.C. Ernest Arthur Turner, the passenger, was drowned. 362014 Sergt. David Irving, the pilot of the aircraft, was uninjured.

As the result of an accident at Cranwell to a Siskin machine of the Royal Air Force Cadet College, Cranwell, on April 26, Flight-Cadet Peter Anthony Meakin, the pilot and sole occupant of the aircraft, sustained injuries from which he died in hospital on the following day.



THE SUPERMARINE-NAPIER S-5 IN A MATCHBOX—NEARLY! A neat little car mascot of the Schneider Trophy winner, standing beside an ordinary matchbox. This mascot is being produced by Messrs. Lejeune, of 132, Great Portland Street, W.1.

AIRISMS FROM THE



FOUR WINDS

South African Air Force Returns

THE South African Air Force machines which accompanied the R.A.F. Service flight from Cape Town to Khartoum, left the latter place on May 1 for Pretoria, 3,000 miles, which they hoped to reach in four days, making Mongalla, 800 miles, the first day.

Australia Flight

WING-COMMANDER E. R. MANNING flew the Mediterranean in his Westland "Widgeon III" (Cirrus) in seven hours on April 25. Starting from Marseilles, he flew via St. Raphael, Ajaccio, Sardinia and Bizerta to Tunis. The visibility was wonderful, and the African coast was seen at 40 miles distance at an altitude of 5,000 ft. When he was taking off at Tunis for Homs the tail skid was damaged and caused delay. The pilot's destination is Australia.

The Australian Light 'Plane Tourists

CAPT. LANCASTER and Mrs. Keith Miller flew from Melbourne to Hobart on April 29 in 6½ hours, in face of very stormy weather.

Cape Town-London Flight

It is reported that Lady Heath's arrival by air in England from Cape Town is indefinite. She has been delayed at Tripoli by a slight attack of fever, and the non-arrival of the Italian seaplane escort, which Signor Mussolini had agreed to despatch. It is learned that the seaplane was lost in a storm.

Col. Lindbergh Coming Again

A WASHINGTON report states that Col. C. Lindbergh intends flying to Europe again in June. Accompanied, possibly by Maj. T. G. Lamphier, officer commanding 1st Pursuit Sqdn., U.S. Army Air Corps, he will fly along a northern

route, starting from Newfoundland and touching at Greenland, Iceland, and Croydon, before proceeding to tour Europe. His machine will be a three-engined all-metal Ford. The "Spirit of St. Louis," his Atlantic machine, is now to be given to the Smithsonian Institute for its museum.

Aerial Tramps Arrive in India

MR. J. S. NEWALL and Mr. N. Vintcent, who started an aerial tramp in two D.H. 9's from London on January 9, reached Karachi on April 26.

Polish Ambitions on the Atlantic

Two Polish airmen, Commandants Izikowsky and Kupala, who arrived at Le Bourget on April 24, are preparing to fly the Atlantic in a French biplane fitted with a 650 h.p. Lorraine engine.

The "Bremen" Abandoned

CAPT. KOEHL, Baron von Huenefeld, and Major Fitzmaurice left Greenly Island on April 26 in the Ford relief machine pilot by Mr. B. Balchen. They landed at Quebec in the afternoon and finished the flight to New York in a Junkers machine, a sister machine to the "Bremen," on April 27. New York gave them an official reception on April 30.

Holland-Dutch Indies Air Service

SEVEN flights between Holland and the Dutch East Indies have been scheduled for this year. Passengers as well as mails will be carried, the fare for each passenger being £300. Next year it is hoped to run a monthly service, out and home. Three-engined (Armstrong-Siddeley "Lynx") Fokker monoplanes will be used for this service.

Penhoët Flying-Boat Wrecked

THE French Penhoët giant flying-boat, fitted with five Gnôme-Rhône "Jupiter" engines, was wrecked on April 25, when it fell into the estuary of the Loire during a test flight. The pilot and two mechanics were rescued, slightly injured, but the designer, M. Richard, who was on board, was drowned.

Le Havre-Bizerta Non-stop Flight

ON April 26, Commandant Guilbaud flew, in a Latham flying-boat (two 500 h.p. Farmans), from Caudebec-en-Caux, near Le Havre, to Bizerta, Tunis, in 15 hrs. 10 mins. He covered about 1,250 miles, flying via Paris, Marseilles, and Ajaccio. There were four passengers.

Ford Light Plane Record

THE F.A.I. has recognised the 972-mile flight recently made by Harry Brooks in a Ford light 'plane, during which, it will be remembered, he was drowned when the machine fell into the water off Titusville, Florida.

Berlin-London in 4½ Hours

ON April 29, Capt. R. H. McIntosh flew from Berlin to London (about 600 miles) in 4½ hours. He was flying the same Fokker "Jupiter" monoplane in which he and Bert Hinkler made their England-India non-stop attempt last year.

Spanish Aeroplane Blessed

AN aeroplane, specially built in Spain for an attempt at beating the world's long-distance record, was blessed by the Archbishop at Seville Aerodrome, on April 30. King Alfonso and the Marqués di Estella were present at the ceremony.

France-Algiers Attempt

M. MICHEL DETROYAT left Le Bourget, Paris, on April 18 to fly to Algiers and back without stopping. The distance was about 1,000 miles, and the pilot was forced to land at Algiers owing to strong head wind.

Air Attache's Visit to French Units

WING-COMMANDER J. R. W. SMYTH-PIGGOTT, Air Attaché at Paris, left Eastchurch on April 28 in a D.H. "Moth" for North Africa on a visit to the French Air Units.

Three New U.S. Air Mail Routes

THE U.S. Postmaster-General recently called for bids for three additional air mail routes. One of these will connect Chicago and Atlanta via Terre Haute, Evansville, Nashville and Chattanooga, with a branch to St. Louis from Evansville. This route will run on night schedule. Another route will



THE GERMAN-IRISH ATLANTIC FLIGHT: Reading from left to right, Baron von Huenefeld, Maj. James Fitzmaurice (of the Irish Free State Air Force), and Capt. Hermann Koehl, who made the first East to West Atlantic crossing by aeroplane, in a Junkers monoplane.

Armstrong Siddeley Aero Engines at the Milan Fair: The three Armstrong Siddeley engines exhibited at the Milan Fair, shown here, are the "Genet" (left), "Mongoose" (centre), and "Lynx" (right).



extend from St. Louis to Kansas City, including Texas to south-western points, and later with a projected line to Mexico City. The third route will run from Chicago to Kalamazoo, via South Bend; to Bay City via Lansing, Flint and Saginaw, with branches from Kalamazoo to Pontiac, via Battle Creek, Jackson, Ann Arbor, and Detroit, and to Muskegon via Grand Rapids.

R.G.S. Honour for Capt. Wilkins

THE King has approved the award of the Patron's Medal by the Royal Geographical Society to Capt. G. H. Wilkins, for his many years' systematic work in Polar regions, culminating in his flight from Point Barrow to Spitzbergen.

American Honours for Foreign Aviators

By a special Bill introduced in the U.S. Senate, President Coolidge has been authorised to confer the Distinguished Flying Cross upon Capt. Costes and Lieut. Le Brix, the Marquis de Pinedo, and the crew of the "Bremen."

Civil Aviation in Canada

ACCORDING to the Office of the High Commissioner for Canada, two companies were recently organised in Canada for aerial transport. Mr. J. E. Hammell, President of Howey Gold Mines, Ltd., a pioneer of the Red Lake Mining district in north-western Ontario, has just organised Northern Aerial Minerals Exploration, Ltd., and has ordered for the company four big Fokker monoplanes. Four light cruisers, probably De Havilland Moths, will also be purchased. Capt. H. A. Oaks will be director of the aerial staff and assistant manager of the enterprise. The project is to undertake prospecting by air, sending men to new fields and keeping them supplied. The big machines will have a cruising radius of 1,000 miles,

and will transport supplies and gangs of men. Mr. Hammell has used the aeroplane on numerous occasions, particularly in connection with the Howey development at Red Lake. He believes that the aeroplane will do more in the next five years to speed up mining development in the north country than any other single factor. Another company for a similar purpose has been organised by Mr. W. N. Cumming, a pilot with previous experience in the Rouyn mining area. The concern has for its principal purpose the purchase of two Fairchild aeroplanes, capable of carrying four passengers with pilot, or a freight load of 1,000 lbs. The planes are to be stationed at Rouyn for service principally to the Cadillac-Malartic gold belt. One machine will be flown from Toronto to the field at once, and the other will be put into service as soon as the lakes are open.

Twenty Years Ago!

Extract from "The Auto." (Precursor of "Flight"), May 2, 1908.

"The Republic."—The envelope of the new French military dirigible, "Republic," which is to replace the lost "Patrie"—is nearly finished. . . . The car is to be equipped with a 70-h.p. engine, and we understand that a horizontal screw will form part of the mechanism for the purpose of maintaining the airship at a steady level while it discharges weight. This addition is particularly important, as it forms the first practical move in the direction of rendering the military airship a weapon of offence, and the trials which are sure to take place in this direction will naturally be watched with the keenest interest."

BRISTOL CLUB'S AIR PAGEANT

THE Air Pageant at Filton, Bristol, will be held next Saturday, May 5. Flying will commence early in the morning as, owing to the exceptionally large entries for all competitive events, a number of heats will have to be run off. Also, until the start of the Pageant at 2 p.m., the public will have the opportunity of joy riding in an Imperial Airways liner, and machines belonging to Messrs. The Surrey Flying Services. A large number of Royal Air Force machines are also expected to arrive, so the morning will be very full of interest. Actually aeroplanes of all sizes and types are coming from all over England, and it is expected that there will be nearly a hundred machines present. A magnificent programme is offered in the Pageant itself, starting at 2 p.m., and finishing at 6 p.m. Owing to the variety of types present, it will open with a parade of machines round the enclosures.

There are two races, one an inter-club race for the Selfridge Cup, and an open handicap for the Talbot O'Farrell Trophy, in which some very high speeds will be reached. The finals only will be run off during the afternoon. An amusing competitive event will be the balloon-bursting competition in which each aeroplane in turn has to chase and burst balloons in the air. Capt. A. S. Broad will give a demonstration of how not to fly, showing for the first time in Bristol, the

use of the new Handley-Page safety slotted wing device. Miss June is to jump out in a parachute, and give a display of wing walking on a machine in full flight, while the great thrills will be provided by the R.A.F., who will not only give their wonderful display of three machines looping, rolling and stunting in formation, but will also have air duels, attacks with guns and bombs, etc., on tanks and armoured cars. At 6 p.m., Her Grace the Duchess of Beaufort will present the prizes and joy riding will continue until dusk.

The members' enclosure (15s. to non-members) and the 5s. enclosures are right on the north side of the aerodrome, and admission to both is obtained from Hayes Lane, so those motoring from Bristol will be well advised to take the route through Westbury-on-Trym, Henbury and Charlton. The 1s. enclosure is also right in the aerodrome, but on the south side, and admission is gained from the main Gloucester Road at the bottom of Filton Hill, so for this enclosure motorists will do best to come from Bristol via Horfield or Southmead. Sixpenny enclosures are on the side of Filton Hill, from where an excellent general view is obtained, but not a close view as in the 1s. area. Entrances are along Golf Club Lane off the Southmead Road, and from about half-way down Filton Hill on the main road.

THE ROYAL AIR FORCE

London Gazette, April 24, 1928

General Duties Branch

The follg. are granted short service commns. as Pilot Officers on probation, with effect from, and with seniority of, the dates indicated:—H. P. Wilson (April 2), J. Addison, D. A. L. Campbell, H. H. Chapman, P. L. M. C. Deacon, J. W. Hawke, F. R. Jones, W. H. Jones, H. Kerr, H. D. McGregor, G. F. Macpherson, R. G. Whalley, E. S. Whitaker, H. J. A. Williams (April 13). The follg. Pilot Officers are promoted to rank of Flying Officer, with effect from dates indicated:—C. H. Hockly (Nov. 8, 1927), G. Bartholomew, E. L. J. Rowe, V. D. Morshead, M. Griffiths, D. S. King, H. C. D. Hayter, A. K. K. Calwell, F. G. Fairhead (March 18), H. Broadhurst (April 1).

Flying Officer F. E. Williams Davis is transferred to Reserve, Class A (April 18); Flying Officer F. W. M. Matthews resigns his permanent commn. (April 18).

The follg. Flying Officers resign their short service commns. (April 25):—J. E. Bolt, G. I. C. Peacocke. The short service commns. of the follg. Pilot Officers on probation are terminated on cessation of duty (April 25):—B. E. Brown, F. J. Dunne.

Medical Branch

P. B. L. Potter, M.B., is granted a short service commn. as Flying Officer for three years on Active List with effect from, and with seniority of, March 28, and is seconded for duty with Princess Alice Memorial Hospital, Eastbourne, from that date. L. I. Hyder is granted a short-service commn. as a Flying Officer for three years on Active List, with effect from Jan. 6, 1926, and with seniority of Jan. 6, 1925 (substituted for Gazette Jan. 26, 1926): Flying Officer L. I. Hyder is promoted to rank of Flight Lt., with effect from Jan. 6, 1928, and with seniority of Jan. 6, 1927 (substituted for Gazette Jan. 10, 1928); Flight Lt. T. K. Place is promoted to rank of Squadron Leader (Dental) on promotion to Major in Army Dental Corps (April 14).

AUXILIARY AIR FORCE

General Duties Branch

No. 601 COUNTY OF LONDON (BOMBING SQUADRON).—The follg. to be Flying Officer:—R. G. Shaw, D.F.C. (March 26). No. 602 CITY OF GLASGOW (BOMBING SQUADRON).—The follg. to be Pilot Officer:—J. K. Horsburgh (March 14).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Flying Officers: M. Wiblin, to Central Flying Sch., Wittering, 24.28. D. C. Shaw, to No. 1 Sch. of Tech. Training, Halton, 1.4.28. A. L. Mortimer, to Marine Aircraft Experimental Estab., Felixstowe, 29.3.28. J. J. Nolan, to No. 6 Sqdn., Iraq, 8.3.28. H. V. Smith, D.C.M., to Aircraft Depot, Iraq, 9.3.28. E. B. Forster and P. B. Chubb, to No. 84 Sqdn., Iraq, 8.3.28. C. V. Lock, L. H. Ross, and W. F. Rimmer, to No. 55 Sqdn., Iraq, 8.3.28. J. V. Yonge, to Experimental Section, Royal Aircraft Estab., S. Farnborough, 11.4.28. L. T. Kerry, M.C., to H.Q., Iraq Command, instead of to Armoured Car Wing, Iraq, as previously notified, 23.2.28. J. R. Brown, D.F.C., to R.A.F. Depot, Uxbridge, 22.3.28. R. Costa, to No. 2 Flying Training Sch., Digby, 20.3.28. A. E. Groom, D.S.M., to R.A.F. Station, Bicester, 3.3.28. N. C. Ogilvie Forbes, to R.A.F. Cadet Coll., Cranwell, 16.4.28.

Pilot Officers: A. P. de Wouff de Wytt, to Armament and Gunnery Sch., Eastchurch, 2.4.28. F. H. L. Searl, to No. 17 Sqdn., Upavon, 5.4.28. M. Fountain-Barber, to No. 4 Sqdn., S. Farnborough, 15.4.28. C. H. Hockly, to No. 2 Sqdn., Manston, 3.4.28. F. R. Balfour and C. G. Davies, to R.A.F. Depot, Uxbridge, on appointment to Short Service Commns., 18.4.28.

The undermentioned Pilot Officers are posted to R.A.F. Depot, Uxbridge, on appointment to Short Service Commns., with effect, 13.4.28:—J. Addison, D. A. L. Campbell, H. H. Chapman, P. L. M. C. Deacon, J. W. Hawke, F. R. Jones, W. H. Jones, H. Kerr, H. D. McGregor, G. F. Macpherson, R. G. Whalley, E. S. Whitaker, and H. J. A. Williams.

Stores Branch

Flight Lieutenants: W. R. P. Allen, to H.Q., R.A.F., Middle East, 28.3.28. E. R. Wood, to Aircraft Depot, India, 13.3.28. F. E. Shersby, to H.M.S. *Courageous*, 22.2.28. R. H. Latham, to R.A.F. Depot, Uxbridge, 28.2.28.

Flying Officers: W. H. Harrison, to No. 1 Stores Depot, Kidbrooke, 31.3.28. A. M. Reidy, to R.A.F. Depot, Uxbridge, 15.4.28. M. F. Tomkins, to the Packing Depot, Ascot, 5.4.28. E. H. Broad, to No. 600 (City of London)

Accountant Branch

Flight Lieutenants: A. J. Moore, to No. 1 Sch. of Tech. Training, Halton, 11.4.28. W. R. Westcombe, to Station H.Q., Heliopolis, 30.3.28. J. M. Adams, to H.Q., R.A.F., Middle East, 26.3.28. **Flying Officers:** R. W. Freeman, to H.Q., Inland Area, Stanmore, 11.4.28. D. Sender, to R.A.F., Station, Sutton's Farm, Hornchurch, 1.4.28. R. S. Sweet, to No. 3 Flying Training Sch., Grantham, 12.4.28. D. F. A. Clarke, to H.Q., R.A.F., Middle East, 29.3.28.

Medical Branch

Flight Lieutenants: H. B. Troup, to Aeroplane and Armament Experimental Estab., Martlesham Heath, 16.4.28. R. W. White, to R.A.F. Officers' Hospital, Uxbridge, 19.4.28. C. J. S. O'Malley, to H.Q., R.A.F., Middle East, 30.3.28. A. Briscoe, M.B., to H.Q., Aden Command, 13.4.28. G. S. Strachan, M.B., to H.Q., R.A.F., India, 13.4.28. **Flying Officer** P. B. L. Potter, M.B., to Special Duty List, on appointment to a Short Service Commn., 28.3.28.

CHANGES IN THE HIGHER COMMANDS, ROYAL AIR FORCE

THE Air Ministry announces the following appointments:—

Air Vice-Marshal F. R. Scarlett, C.B., D.S.O., to be Air Officer Commanding-in-Chief, Air Defence of Great Britain (temporary) during the absence in Australia of Air Marshal Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C., to date May 26, 1928.

Air Vice-Marshal C. L. Lambe, C.B., C.M.G., D.S.O., to be Air Officer Commanding, Coastal Area, vice Air Vice Marshal Scarlett, to date May 26 1928.

Air Vice-Marshal F. R. Scarlett, C.B., D.S.O., joined the Navy as midshipman in 1891 and served in various ranks both in home and foreign waters until 1913, when he became Inspecting Captain of Aircraft in the Naval Wing of the Royal Flying Corps. During the war he served in the R.N.A.S., in the Mediterranean and was mentioned in despatches for his work at the Dardanelles and decorated for services in reconnaissance and bombing flights. With the formation of the Royal Air Force, he was appointed temporary Brigadier-General and was for a time Director of the Air Division at the Admiralty. Later he commanded No. 12 Group, Royal Air Force, and on accepting a permanent commission in the Royal Air Force, became an Air Commodore on August 1, 1919. He then commanded the Royal Air Force Technical School for Aircraft Apprentices at Halton, Bucks, and was promoted Air Vice-Marshal on January 1, 1924. He has commanded Coastal Area, Royal Air Force, since September, 1924. Last year he commanded the British team, consisting of Royal Air Force Officers, which won the Schneider Trophy in Italy.

Air Vice-Marshal C. L. Lambe, C.B., C.M.G., D.S.O., R.A.F., entered the navy as a midshipman in 1891. He served with the Benin expedition, 1897, and was promoted Commander, R.N., in 1908. In August, 1914, he was appointed Wing Commander, Royal Naval Air Service, whilst in charge of the seaplane carrier *Hermes*. Later he was promoted Captain and commanded the Royal Naval Air Service squadrons on the Belgian Coast, which co-operated with the Royal Flying Corps. On the formation of the Royal Air Force in 1918, he received the temporary rank of Brigadier-General and later of Major-General. Early in 1919 he was appointed Director of Equipment at the Air Ministry and shortly after was promoted Air Commodore. In 1924 he was selected to command the Royal Air Force, Halton. He became an Air Vice-Marshal in January, 1925. For his services during the war he received several decorations and was several times mentioned in despatches.

IN PARLIAMENT

Dutch Air Service, Amsterdam-Batavia

SIR SAMUEL HOARE, in reply on April 18 to Lieut.-Com. Kenworthy, who asked what information there was about the projected air-mail route from Amsterdam to Batavia, Dutch East Indies, by way of British India; whether this mail service would make use of British aerodromes and air stations and, if so, to what extent; and whether the Australian Government was expected to link up the Australian air service with this Dutch air line, thus completing an air service for mails from Europe to Australia, said he had no knowledge of any specific official proposals by the Netherlands authorities for a Dutch air service to Batavia through British India. He was trying to get the line to India into operation as soon as he could.

NEW COMPANY REGISTERED

COBHAM-BLACKBURN AIR LINES, LTD.—Capital £1,000 in £1 shares. Acquiring as going concerns, those portions of the businesses and negotiations carried on (1) by the North Sea Aerial and General Transport, Ltd., and (2) by Alan Cobham Aviation, Ltd., relating to proposed African Air Services, to adopt an agreement with the said companies; to promote a company whose principal object will be to establish, maintain and watch lines of aerial conveyances in Africa and elsewhere; to establish, maintain and work lines of aerial conveyances between Alexandria and Capetown, and between other places selected by the company; to manufacture and deal in aerial conveyances of all kinds, and the component parts thereof, etc. First directors: Sir Alan Cobham, R. Blackburn, Col. W. Wright and Capt. T. A. Gladstone. Solicitors: Kenneth Brown, Baker, Baker, Lennox House, Norfolk Street, W.C.2.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.e. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN, 1927

Published May 3, 1928

602. F. G. DIAGO. Airships. (279,017.)
4,940. W. M. BLAGDEN and W. G. FRYER. Drift-correcting compass. (288,412.)
16,735. H. WIESER. Tyres for land wheels of aerial machines. (288,458.)
20,060. F. FEHRENBACH. Light-metal pistons. (288,467.)
20,604. H. FREISE. Aeroplanes, etc. (275,638.)
32,268. FIAT Soc. ANON. Mounting of radiators on aeroplanes. (281,671.)

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